# '10 YZF-R6
# SS KIT MANUAL

**The Performance Edge**

*for excellent riders*

YEC
RACING PARTS

# Introduction

- This manual is intended for persons with knowledge and experience of motorcycles. Please refer to the YZF-R6 service manual, which shall be published from YAMAHA MOTOR CO. LTD., for information on part assembly and maintenance.
- The design of the YZF-R6 racing kit is based on YZF-R6, according to FIM racing rules, but that does not mean the kit conforms to all competitions. When used in races, riders must mount the YZF-R6 racing kit at their own discretion after checking the rules of competition issued by the sponsor.

**About Warranty**

- Please understand that these parts are not covered by warranty.
- The Manufacturer does not take any responsibility for problems caused by these parts.

**Request**

- These kit parts are intended exclusively for racing purposes. You are strictly requested not to use them on public roads.
- The specifications and usage methods of these kit parts along with the contents of this manual are subject to change without notice for improvement.

**Parts List Symbols**

- The star mark (*) means that the part is included in the kit set and is a genuine Yamaha part. Therefore, you can easily purchase the part at any Yamaha part dealer when necessary.
- The circle mark (°) means that when needed, the individual part is sold separately to the kit set.

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| ° | 1 | 4C8-11181-70 | GASKET, CYLINDER HEAD 1 | 3 | t=0.30mm |
| * | 2 | 5VY-11351-00 | GASKET, CYLINDER 1 | 3 | |
| * | 3 | 4C8-11603-00 | PISTON RING SET | 12 | |
| | 4 | 5VY-1165A-01 | BOLT, CONNECTING ROD SPECIAL | 24 | |
| * | | | | 24 | |

**Symbol Marks**

Particularly important information is distinguished in this manual by the following notations.

⚠ **This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.**

**⚠ WARNING** **A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

***NOTICE*** **A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.**

**TIP** **A TIP provides key information to make procedures easier or clearer.**

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# 1 Engine Specifications

| Spec | | SSP | STK | STD |
|---|---|---|---|---|
| Displacement | | 599 cm³ | 599 cm³ | 599 cm³ |
| Bore/Storke | | 67.0 x 42.5 mm | 67.0 x 42.5 mm | 67.0 x 42.5 mm |
| Maximum engine speed (limiter controlled speed) | | 15800 rpm | 15800 rpm | 15800 rpm |
| Compression ratio (recommended value) | | 14.5:1 (Depend of head-gasket thickness and cylinder head surface grinding) | 13.7:1 (Depending on the thickness of the head gasket) | 13.2:1 |
| Valve timing (event angle) | INT. | 110° | 105° | 105° |
| | EXT. | 115° | 110° | 110° |
| Squish height (minimum) | | 0.60 mm | 0.60 mm | 0.70 mm |
| Clearance between valve and piston (minimum) | INT. | 1.05 mm (ATDC 12°) | 1.05 mm (ATDC 12°) | 1.15 mm (ATDC 12°) |
| | EXT. | 1.62 mm (BTDC 12°) | 1.62 mm (BTDC 12°) | 1.80 mm (BTDC 12°) |
| valve (tappet) clearance | INT. | 0.15 – 0.19 mm | 0.18 – 0.22 mm | 0.18 – 0.22 mm |
| | EXT. | 0.23 – 0.27 mm | 0.23 – 0.27 mm | 0.23 – 0.27 mm |

# 2 Kit Parts

## 2-1 Engine Parts

### 1. Maintenance Set (2C0-MAINT-71)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| ° | 1 | 2C0-11181-76 | GASKET, CYLINDER HEAD | 3 | t=0.45mm |
| * | 2 | 2C0-11603-00 | PISTON RING SET | 12 | |
| * | 3 | 93450-16159 | CIRCLIP | 24 | |
| | 4 | 2C0-1165A-00 | BOLT, CONNECTING ROD | 24 | |
| * | 5 | 90179-07001 | NUT | 24 | |
| * | 6 | 4SV-12119-00 | SEAL, VALVE STEM OIL | 48 | |
| * | 7 | 2C0-12213-00 | GASKET, TENSIONER | 3 | |
| ° | 8 | 2C0-13414-70 | GASKET, STRAINER | 3 | ANTI STICK TYPE |
| ° | 9 | 2C0-15451-70 | GASKET, CRANKCASE COVER 1 | 3 | ANTI STICK TYPE |
| ° | 10 | 2C0-15461-70 | GASKET, CRANKCASE COVER 2 | 3 | ANTI STICK TYPE |
| ° | 11 | 2C0-15456-70 | GSKT., 1 | 3 | ANTI STICK TYPE |
| * | 12 | 93102-35017 | SEAL, OIL | 3 | FOR DRIVE AXLE |
| * | 13 | 90151-06024 | SCREW, CROSSRECESSED COUNTERSUNK | 9 | FOR BEARING HOUSING |

## 2. Spark Plug Set (5FL-R045Q-70, 13S-R373A-70)

**Parts List**

**Semi surface discharge Type (5FL-R045Q-70)**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 5FL-1119C-70 | PLUG, SPARK | 4 | NGK R0045Q-10 |

**Parts List**

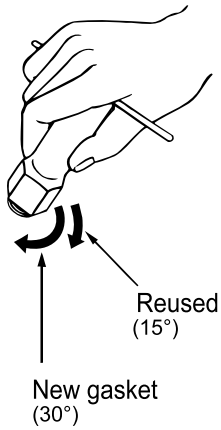
**Angled ground strap Type (13S-R373A-70)**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-1119C-70 | PLUG, SPARK | 4 | NGK R0373A-10 |

**TIP**

**Since these spark plugs have a copper gasket, caution is needed during installation on the following points.**

1. **The tightening torque is 12 – 15 N•m (1.2 – 1.5 kgf•m).**
2. **When not checking the torque, tighten by rotating through 30° after manual tightening in the case of new plugs. When reusing plugs, tighten by rotating through 15°.**



## 3. Head Gasket

**Parts List**

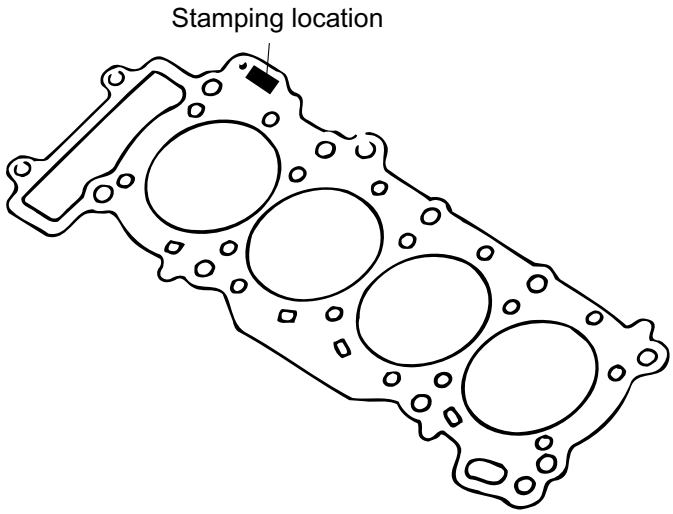
| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-11181-71 | GASKET, CYLINDER HEAD | 1 | t=0.40mm |
| | 2 | 2C0-11181-76 | GASKET, CYLINDER HEAD | 1 | t=0.45mm |
| | 3 | 2C0-11181-81 | GASKET, CYLINDER HEAD | 1 | t=0.50mm |
| | 4 | 2C0-11181-86 | GASKET, CYLINDER HEAD | 1 | t=0.55mm |

The thickness of the standard parts is 0.60mm.

These parts are used to adjust the squish height. In normal cases, use the one with -76 (0.45mm). After processing the cylinder (upper case), make sure to check the squish height and use the gasket so that the squish height becomes 0.60mm or above.

**TIP**

**Squish height means the gap between the flat portion of the piston and the head cylinder.**



**Measuring the volume of the cylinder head combustion chamber**

**TIP**

**To obtain the highest performance for race use, the four cylinders should be uniform. If you modify the head cylinder, always measure the combustion chamber volume and do the work based on the measured value.**

Measure the volume of the combustion chamber of the cylinder head (commonly called the dome volume) as follows.

Measuring equipment

1. Burette
2. Glass plate
3. Oil (3:1 mixture of torque converter oil and white gasoline)
4. Vaseline (to seal the valve and glass plate)

Measurement method

1. Tighten a regulation spark plug to the regulation torque in the cylinder head to be measured.
2. Set so that the alignment surface of the combustion chamber is level.
3. Apply a thin coat of Vaseline to the valve face and set the IN and EX valves.
4. Apply a thin coat of Vaseline to the combustion chamber alignment surface and set the glass plate.
5. Add drops of oil from the burette. The total added amount minus the valve back clearance is the volume of the combustion chamber.

## 4. Piston Set (13S-116A0-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| * | 1 | 13S-11631-00 | PISTON | 4 | |
| * | 2 | 2C0-11603-00 | PISTON RING SET | 4 | |
| * | 3 | 2C0-11633-00 | PIN, PISTON | 4 | |
| * | 4 | 93450-16159 | CIRCLIP | 8 | |

Select four pistons so that the difference in their weights does not exceed 0.5g.

## 5. Connecting Rod Set (13S-1165B-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| * | 1 | 13S-11650-00 | CONN. ROD ASSY., 1 | 4 | |

Select four connecting rod assemblies so that the difference in their weights does not exceed 2g and combine them so that the small end weights are uniform. (by Yamaha's measuring method)

## 6. Crankshaft (2C0-11411-70)

**Parts List**

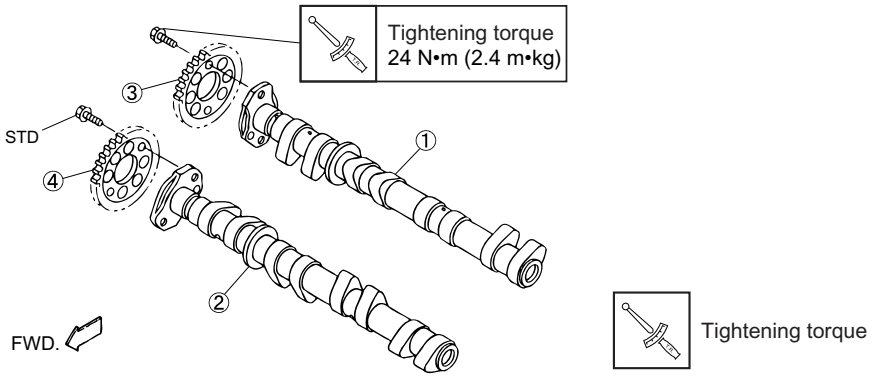
| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| * | 1 | 2C0-11411-00 | CRANKSHAFT | 1 | |

Select a crankshaft with good balance.

## 7. Cam Shaft and Cam Sprocket

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-12171-72 | SHAFT, CAM 1 | 1 | INT |
| | 2 | 2C0-12181-71 | SHAFT, CAM 2 | 1 | EXT |
| | 3 | 2C0-12176-80 | SPROCKET, CAM 1 | 1 | INT |
| | 4 | 2C0-12177-80 | SPROCKET, CAM 2 | 1 | EXT |




**Assembly of Cam Sprocket**

By making the assembly holes of the cam sprocket of the racing kit long, the valve timing can be adjusted within the range of -2º to +6 º (CA) compared with standard timing.

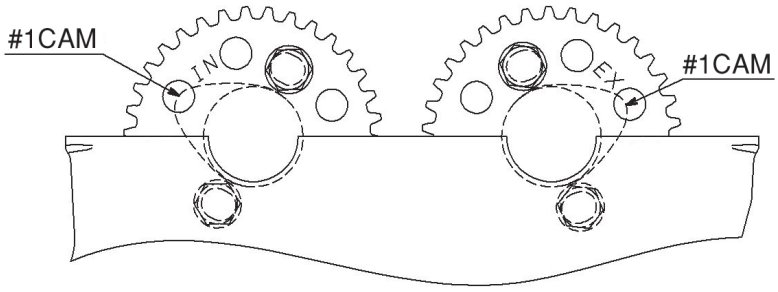
**TIP**

**For valve timing adjustment, refer to the KIT TOOLS MANUAL.**

***NOTICE***

- **When fitting the camshaft, use the cam sprockets of the kit and always set the valve timing to match. If otherwise, no intended performance can be expected and more over, the engine may be damaged.**
- **When using this camshaft, use the valve spring set 2C0-A2110-70.**

Sprocket assembly position at top dead center point of #1 cylinder compression



## 8. Valve Spring Set (2C0-A2110-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-12113-70 | SPRING,1 | 8 | For 2C0-12171-71 (INT)<br>Identifying color:<br>Light blue |
| | 2 | 2C0-12114-70 | SPRING,2 | 8 | For 2C0-12181-71 (EXT)<br>Identifying color: Yellow |
| | 3 | 2C0-12117-70 | RET., VALVE SPRING | 16 | |

- This set will be effective in improving the engine performance and durability if it is provided exclusively for the kit cam shaft and used in combination.

***NOTICE***

**When using this valve spring, use the camshafts 2C0-12171-71, 2C0-12171-72, and 2C0-12181-71.**

## 9. Oil Pump (2C0-13300-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-13300-70 | OIL PUMP ASSY | 1 | |

- This pump is capable of a larger discharge than the STD counterpart.

## 10. Air Funnel Set (MGC-A300908-10)

**Parts List**

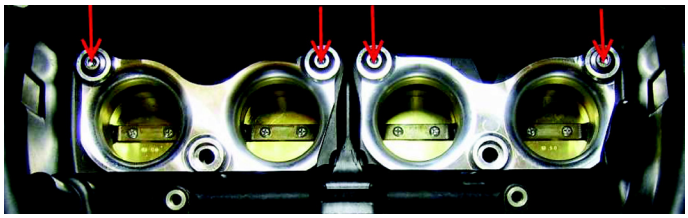
| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | | PRIMARY FUNNEL | 2 | L=15.9mm |
| | 2 | | SUPPORT L | 1 | |
| | 3 | | SUPPORT R | 1 | |
| | 4 | | EXTENSION FUNNEL R | 2 | |
| | 5 | | EXTENSION FUNNEL L | 2 | |

- This set is capable of higher intake efficiency than the STD counterpart.

**Fitting Method**

1. Installing the Primary Funnel

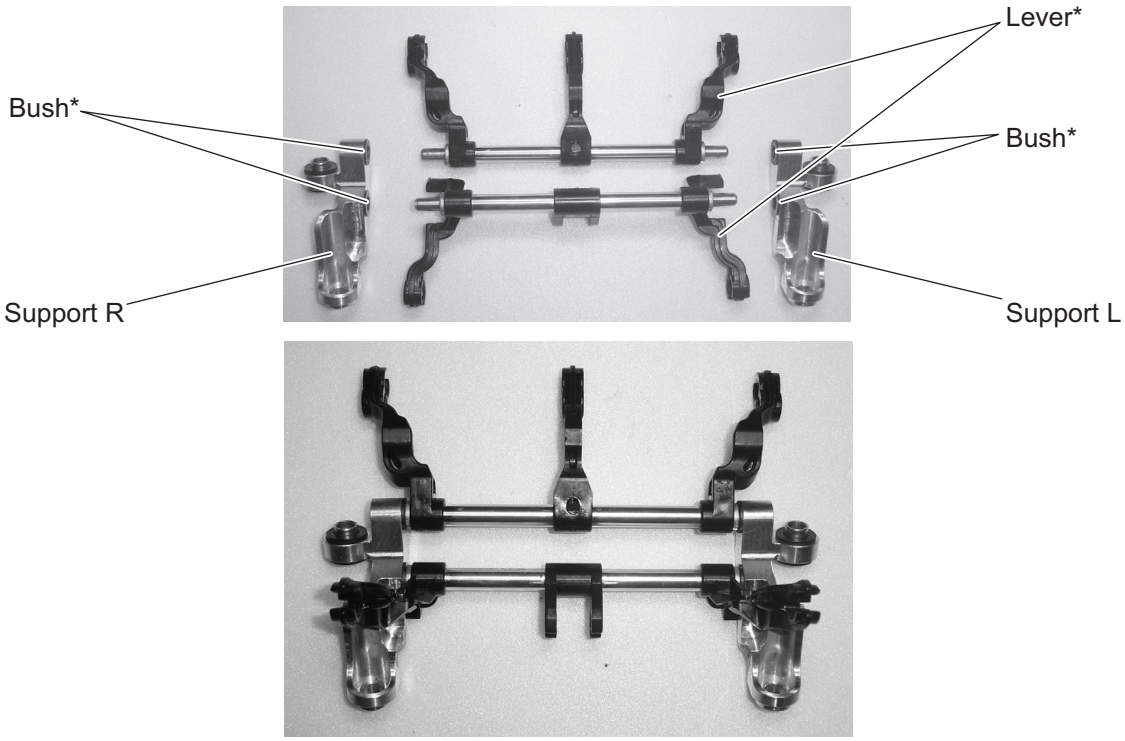
Screw on the plates on the throttle body. Put only the 2 lower screw like on the schema. Use standard screw.



2. Assemble Support and Axle

The axles are the standards ones; don't forget to put the small ring into the hole.

*Use the lever and bushing intended for a STD machine.

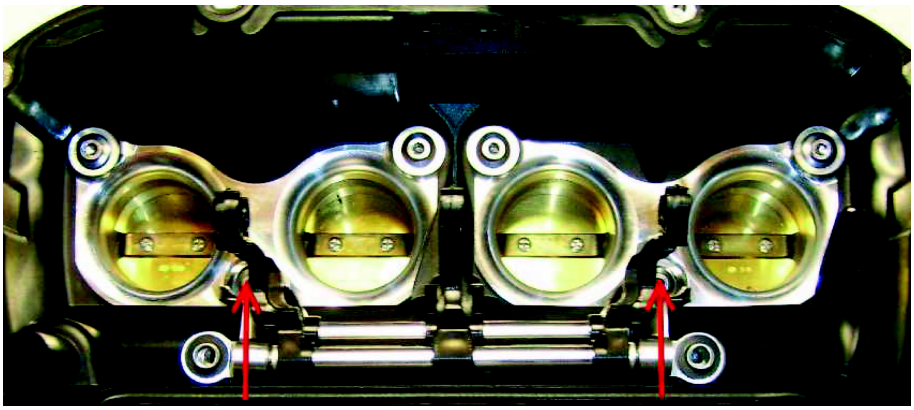



Lever assembly

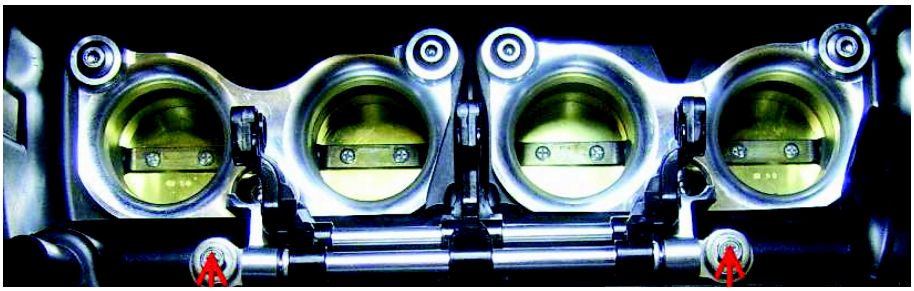
3. Mount the Assembly

Secure the lever assembly to the primary funnel.

Secure using standard screws in the places illustrated.

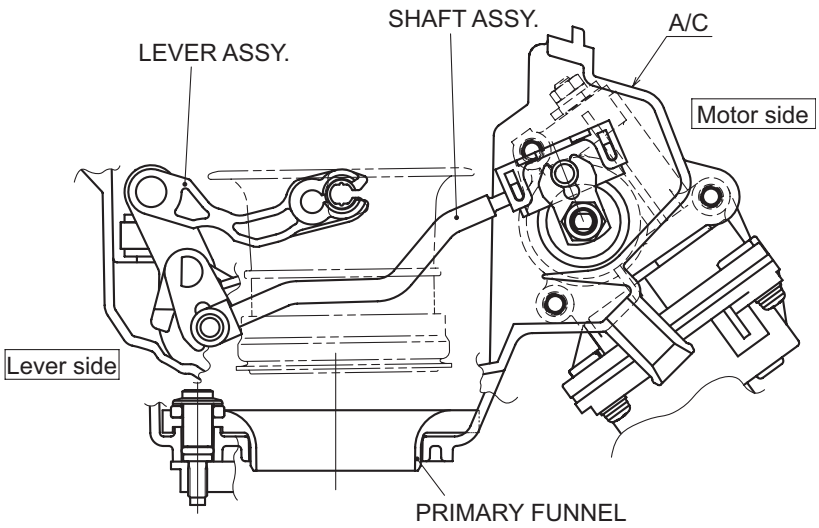


Then put the screw on the superior part of the supports (shown by a red arrow on the photo Below). Make sure that the axle can easily turn without friction.



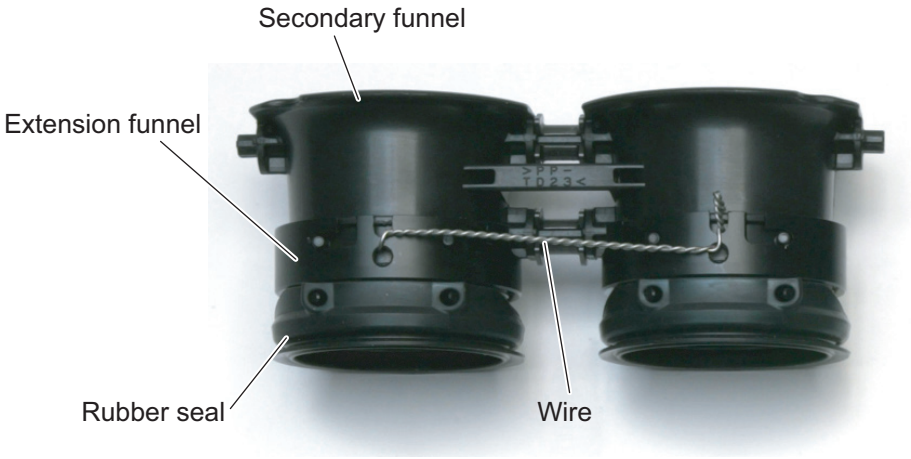
4. Connecting Rod

Use standard connecting rod. Begin by clipping white prismatic side to the motor axle, then clip other side to the tong of the inferior axle.



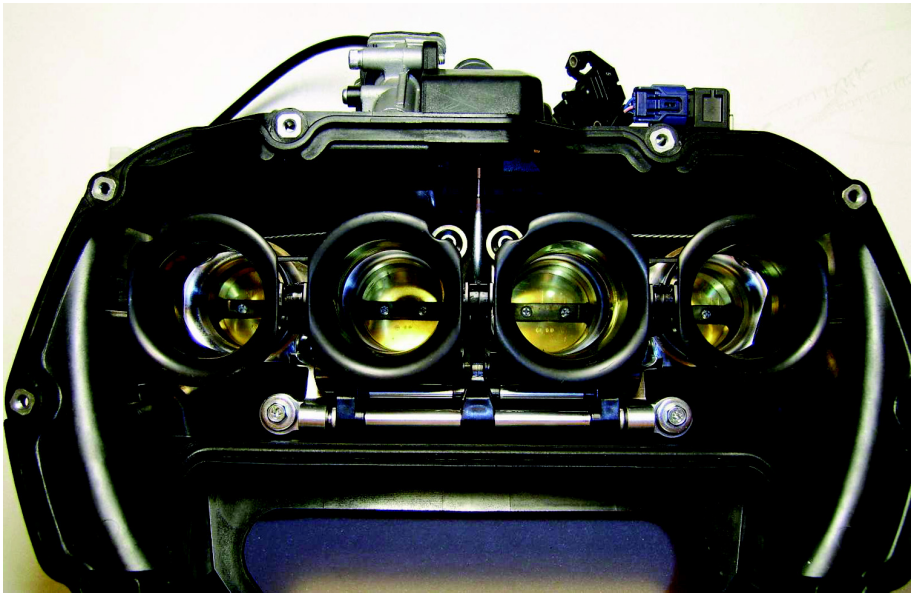
5. Fitting the Extention Funnel

Attach the extension funnel to the standard secondary funnel. Note the direction of the groove on the extension funnel and connect with wire so that it does not turn and come off.




6. Fitting the Secondary Funnel

Fit the standard rubber seal to the secondary funnel before attaching the lever assembly.



**Ycci System Control**

You can use the Ycci system as the kit funnel.

You can control the operation timing by using the YMS software packed together with the kit ECU.

You can also control the STD funnel by using the YMS software.

This set is made by MG Competition. For details of the specification, please check with MG Competition.

TEL +33 (0) 4 50 25 59 96

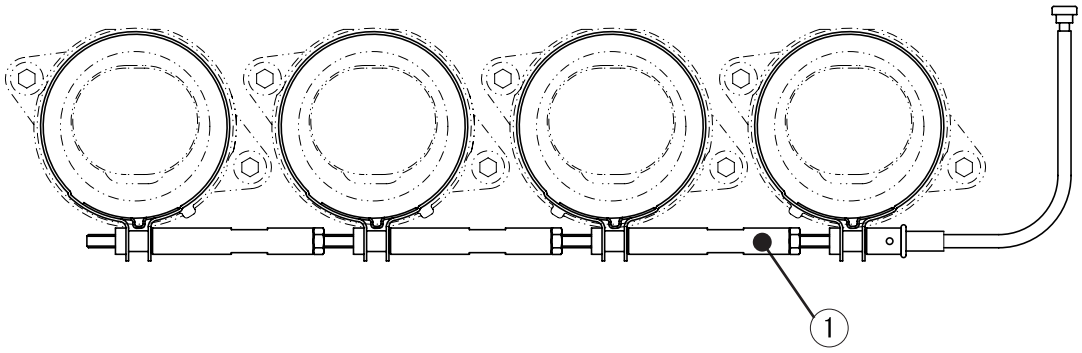
FAX +33 (0) 4 50 25 59 98

Web http://www.mgcompetition.fr/

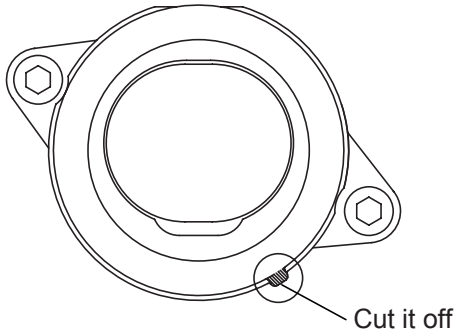
## 11. Throttle Body Clamp Assembly (2CO-1351A-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-1351A-70 | THROTTLE BODY CLAMP ASSY. | 1 | |




This part is used to enhance maintenance performance of the throttle body. Before using it, cut off the protrusion for positioning bands at the cabjoint.




The part has a collar to prevent over-tightening. In normal cases, the part will not be tightened till it reaches to the collar. Just manually tighten it.
Make sure to put a new band through a M4 x 0.7 tap before using it.

## 12. AIS Plug Set (13S-A4890-70)

This plug set is used when the AIS (Air Induction System), an exhaust gas purification system, is removed.

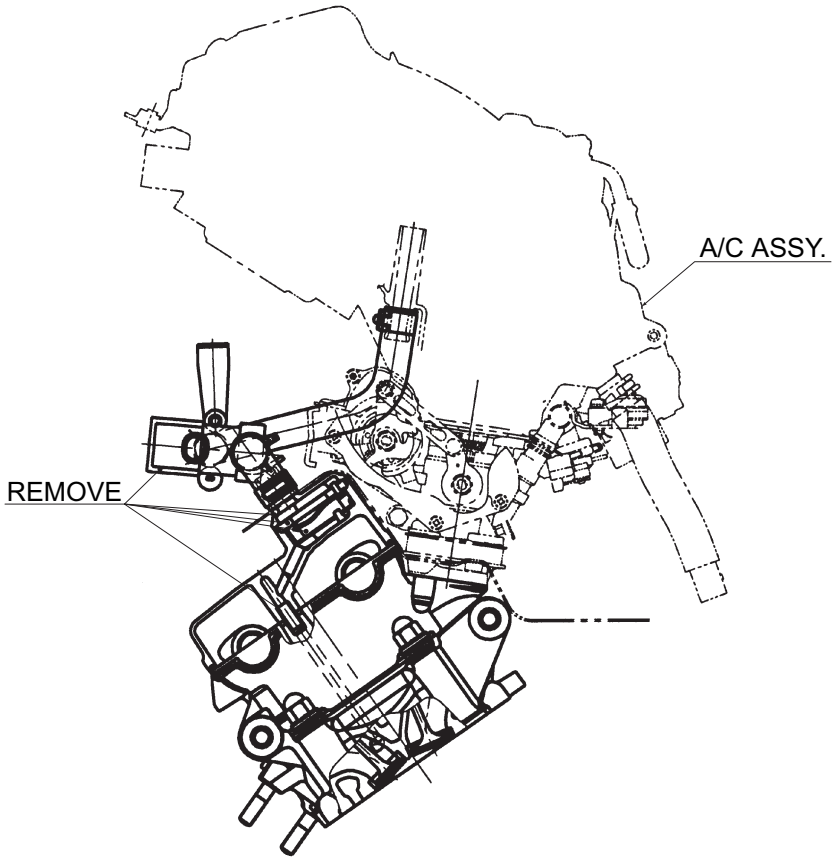
**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 5SL-1482L-70 | PLATE, 2 | 2 | |
| * | 2 | 93608-16M16 | PIN, DOWEL | 4 | |
| | 3 | 90336-10020 | PLUG, TAPER | 1 | |

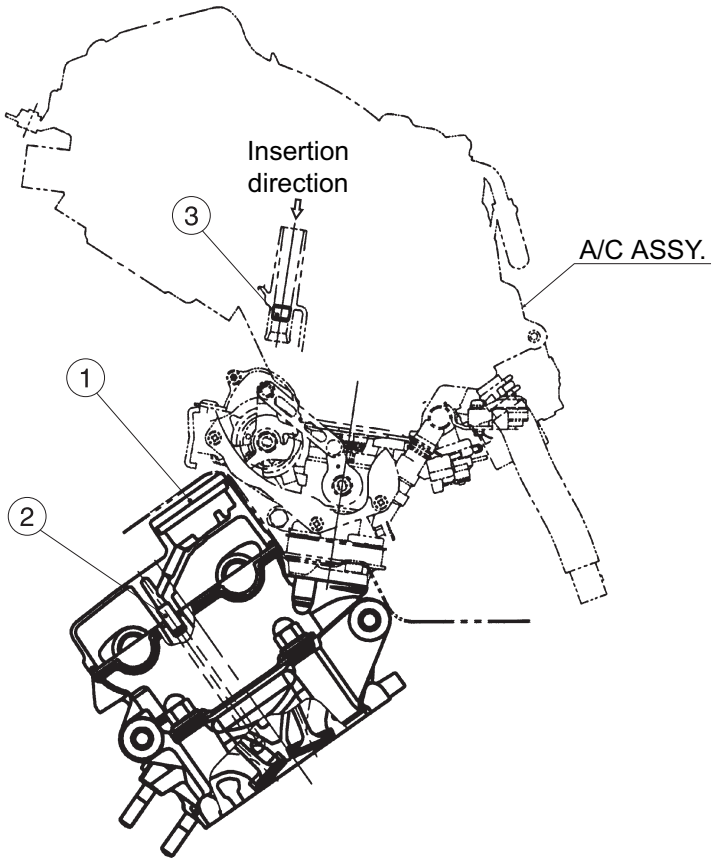
**Installation**

1. Remove the hose attached to the cylinder head cover and the air cut-off valve assembly accompanying the hose.
2. Remove the cap fitted to the hose and remove the reed valve and plate from the inside.
3. Install the plate (5SL-1482L-70) in replacement of the cap. Apply liquid gasket to the plate.
4. Remove the cylinder head cover and the four collars fitted to the cover. Install the PIN (93608-16M16).
5. After removing the hose connected to the air cleaner case from the air-cut valve assembly, open the upper case of the air cleaner case and insert the PLUG (90336-10020) into the hole where the hose was connected.

STD




KIT

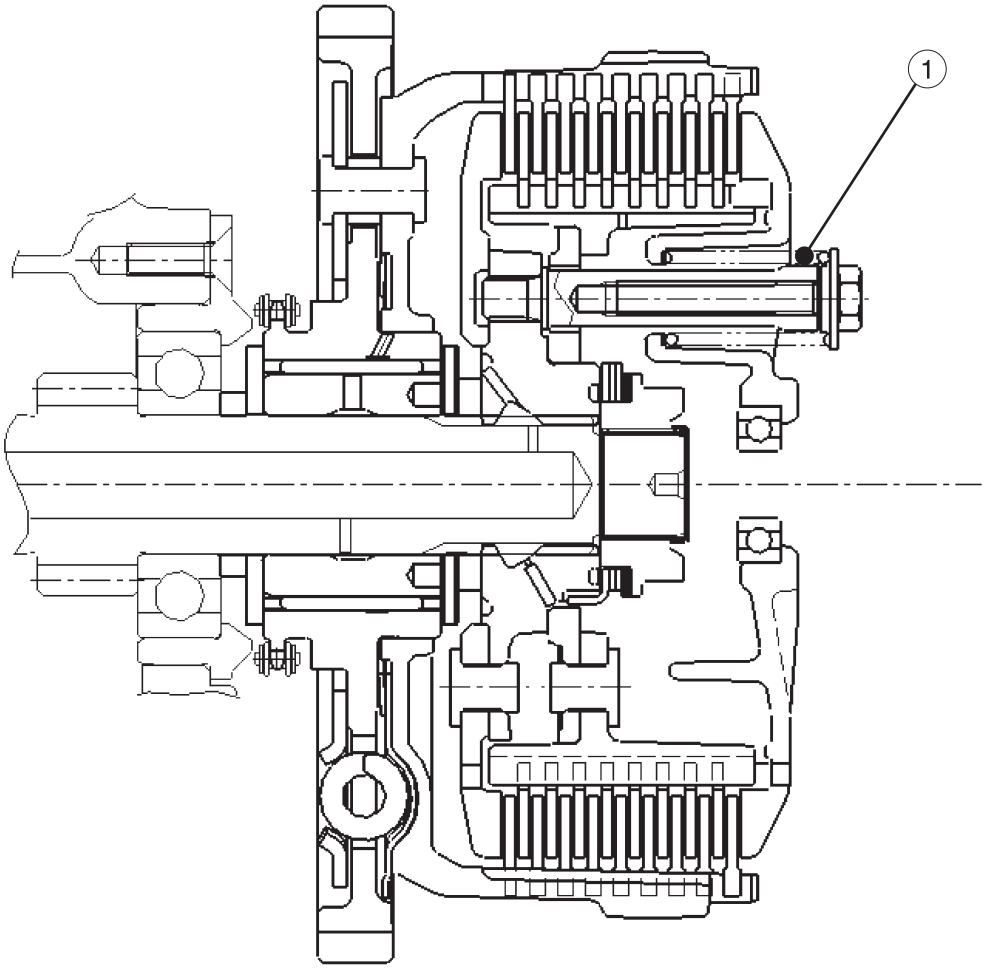


## 13. Clutch Spring Set (2CO-A6330-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-16334-70 | SPRING, CLUTCH 2 | 6 | Identifying color: Green |

The clutch spring should have a bigger mounting load than standard.

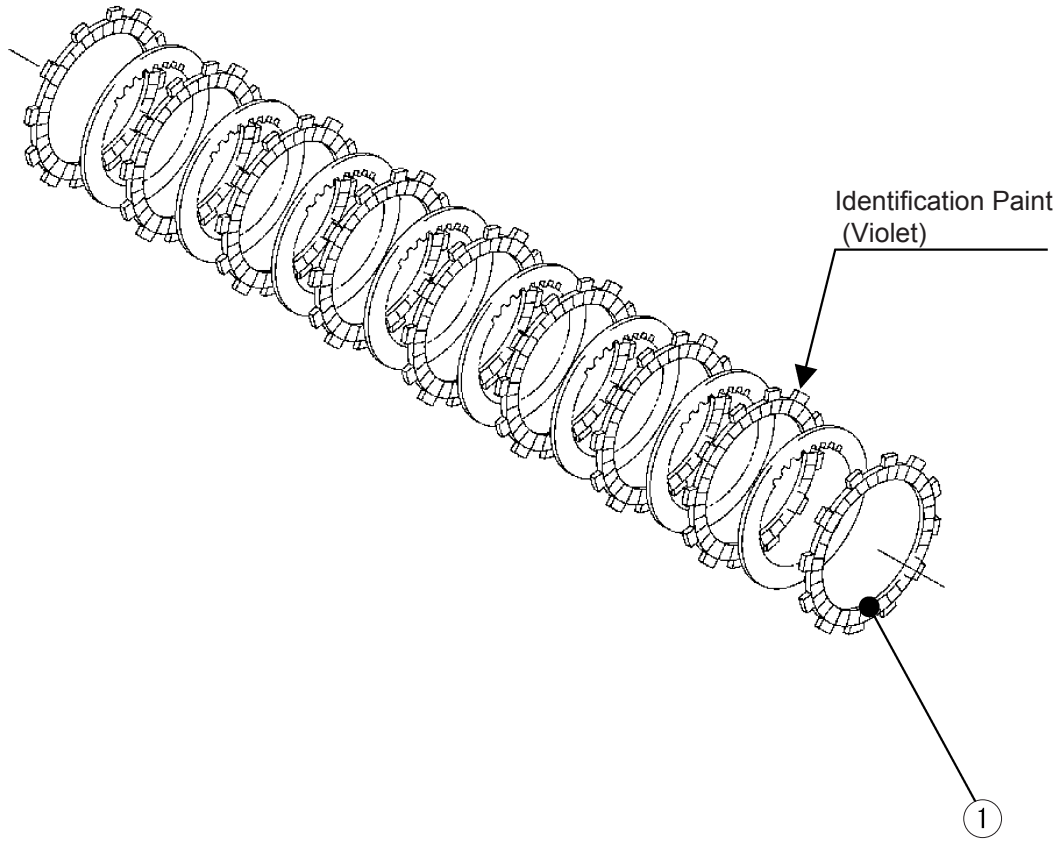


## 14. Friction Plate Set (2CO-A6321-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 5EB-16321-72 | PLATE, FRICTION 1 | 9 | |

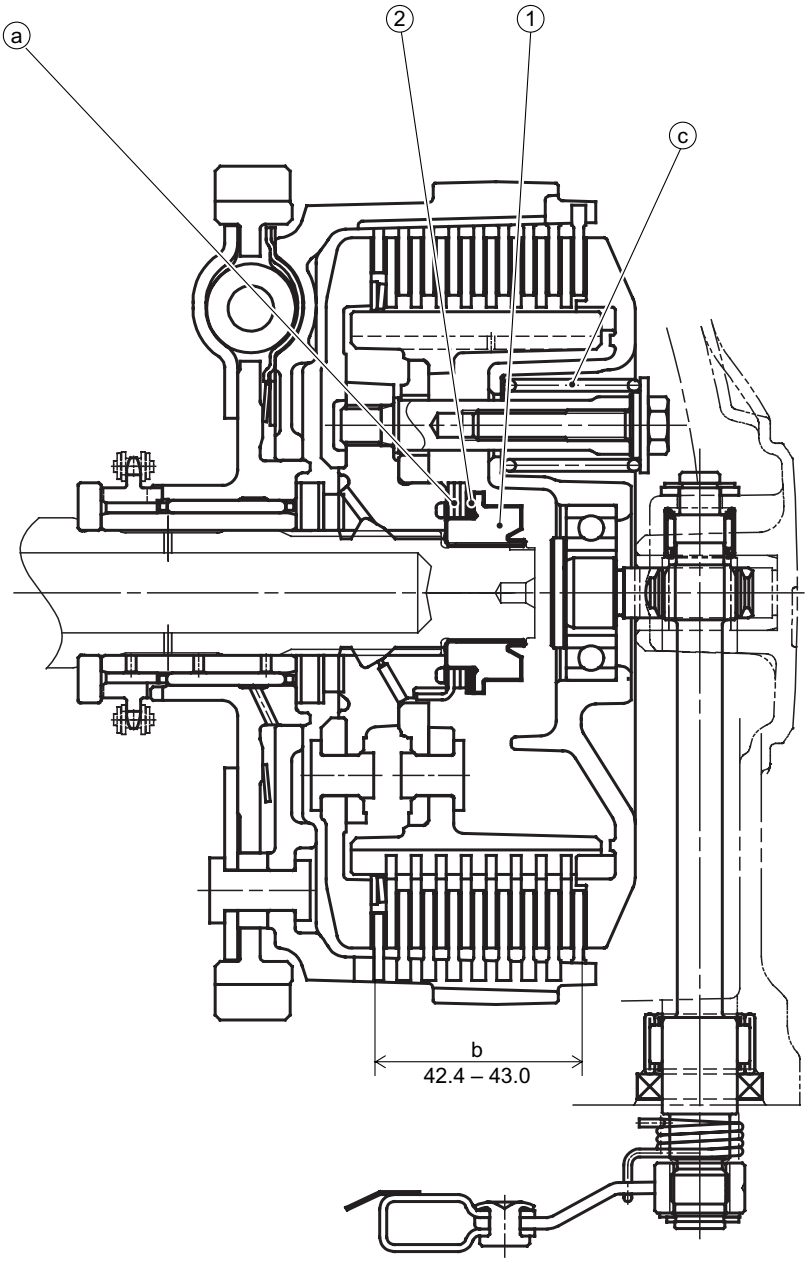
Compared to STD, the friction plate enhances durability and operation.



## 15. Slipper Clutch Setting Set (4B1-A6377-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 4B1-16377-70 | NUT, LOCK | 1 | |
| | 2 | 4B1-16391-70 | SHIM | 3 | |



**(Setting of back torque limiter of clutch).**

A clutch with a back torque limiter mechanism is installed in the YZF-R6 engines. The operation of the back torque limiter can be adjusted through adjusting: ② the number of SHIMs (set up for the kit); ⓐ the number of springs; ⓑ the whole thickness of the clutch plate; and the strength of ⓒ spring (set up for the kit) of the slipper clutch setting set.

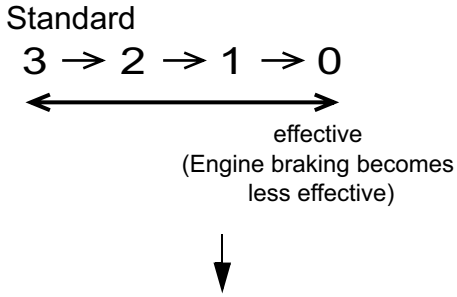
**(Recommended setting method)**

To begin with, the dimensions of the clutch are re-set to the standard values. (For details, please refer to the service manual published from YAMAHA MOTOR CO. LTD.

↓

If you attach the slipper clutch setting of kit ① ②, make it the same as the standard setting.

When decreasing the number of SHIMs (standard setting is three) of slipper clutch setting set, the back torque limiter tends to be effective (Engine braking becomes less effective).



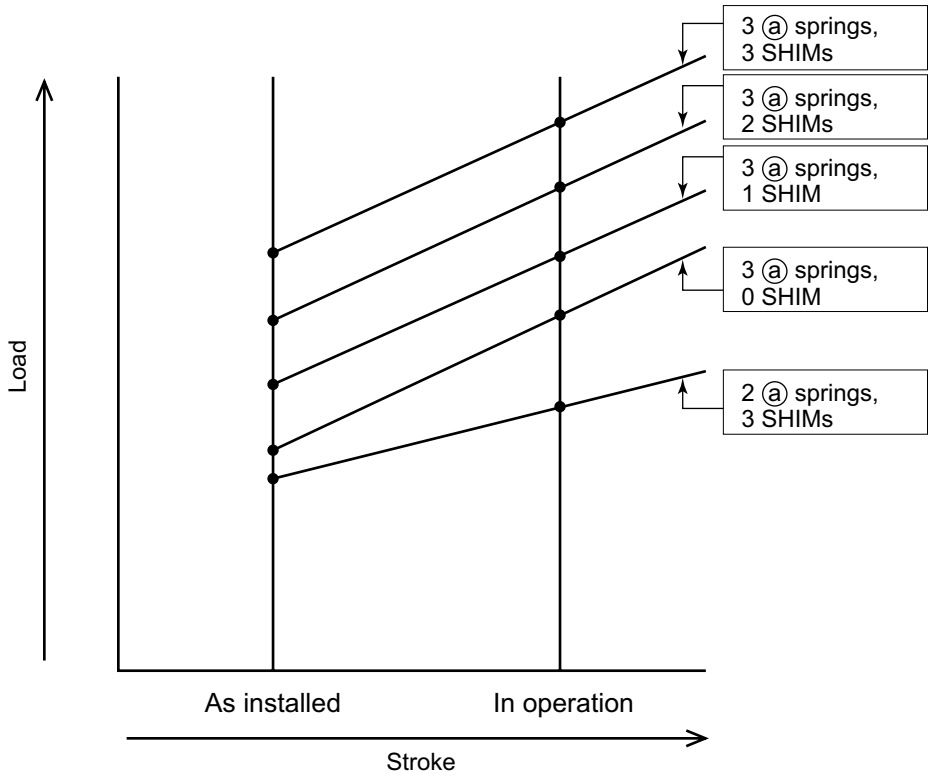

Further, when decreasing the number of ⓐ spring (the number of standard setting is three) to two, the back torque limiter becomes effective (Engine braking becomes less effective).

The clutch spring ⓒ can be either the kit item or the standard item.

If you mount the clutch spring from the kit, the back torque limiter tends to be less effective (the engine brake becomes stronger).

***NOTICE***

**When decreasing the number of ⓐ spring to two, the caution should be taken to surely use three pieces of SHIMs for the slipper clutch setting set. If its number being less than the above, the less load may be supported so as to exert serious influences on driving. Decreasing the number of ⓐ spring to one is not allowed.**


3 ⓐ springs,
3 SHIMs
3 ⓐ springs,
2 SHIMs
3 ⓐ springs,
1 SHIM
3 ⓐ springs,
0 SHIM
2 ⓐ springs,
3 SHIMs
Load
As installed
In operation
Stroke

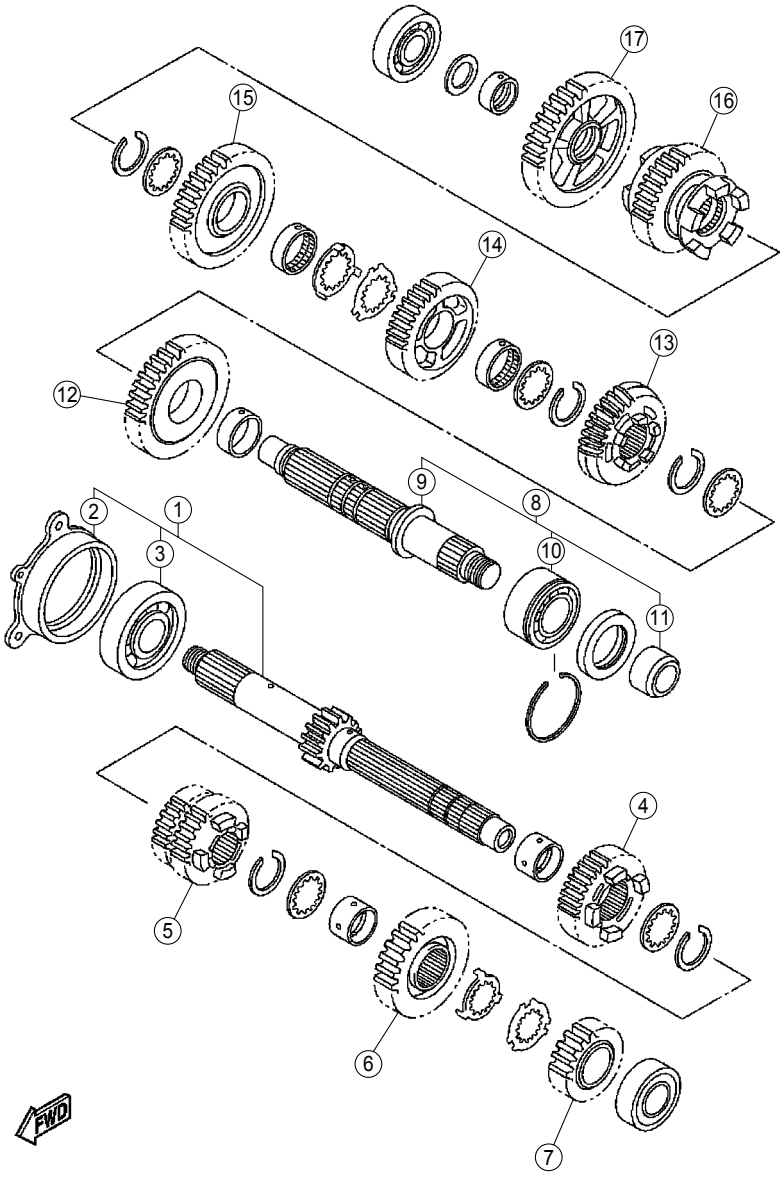
## 16. Transmission Gear

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-17411-80-A | AXLE, MAIN | 1 | A |
| | 1 | 2C0-17411-90-B | AXLE, MAIN | 1 | B |
| * | 1 | 2C0-17411-00 | AXLE, MAIN | 1 | C |
| * | 2 | 2C0-15163-00 | HSG., BEARING | 1 | |
| * | 3 | 93306-20562 | BRG. | 1 | |
| | 4 | 2C0-17151-71-A | GEAR, 5TH PINION | 1 | A |
| | 4 | 2C0-17151-80-B | GEAR, 5TH PINION | 1 | B |
| | 4 | 2C0-17151-90-C | GEAR, 5TH PINION | 1 | C |
| | 5 | 2C0-17131-80-A | GEAR, 3RD PINION | 1 | A |
| | 5 | 2C0-17131-71-B | GEAR, 3RD PINION | 1 | B |
| | 5 | 2C0-17131-90-C | GEAR, 3RD PINION | 1 | C |
| | 6 | 2C0-17161-70-A | GEAR, 6TH PINION | 1 | A |
| * | 6 | 2C0-17161-00 | GEAR, 6TH PINION | 1 | B |
| | 6 | 2C0-17161-90-C | GEAR, 6TH PINION | 1 | C |
| | 7 | 2C0-17121-80-A | GEAR, 2ND PINION | 1 | A |
| | 7 | 2C0-17121-90-B | GEAR, 2ND PINION | 1 | B |
| * | 7 | 2C0-17121-00 | GEAR, 2ND PINION | 1 | C |
| | 8 | 2C0-17402-70 | DRIVE, AXLE ASSY. | 1 | |
| * | 9 | 2C0-17421-00 | AXLE, DRIVE | 1 | |
| * | 10 | 93305-20509 | BRG. | 1 | |
| * | 11 | 90387-25016 | COLLAR | 1 | |
| | 12 | 2C0-17221-81-A | GEAR, 2ND WHEEL | 1 | A |
| | 12 | 2C0-17221-90-B | GEAR, 2ND WHEEL | 1 | B |
| * | 12 | 2C0-17221-00 | GEAR, 2ND WHEEL | 1 | C |
| | 13 | 2C0-17261-71-A | GEAR, 6TH WHEEL | 1 | A |
| | 13 | 2C0-17261-80-B | GEAR, 6TH WHEEL | 1 | B |
| | 13 | 2C0-17261-90-C | GEAR, 6TH WHEEL | 1 | C |
| | 14 | 2C0-17241-80-A | GEAR, 4TH WHEEL | 1 | A |
| | 14 | 2C0-17241-70-B | GEAR, 4TH WHEEL | 1 | B |
| | 14 | 2C0-17241-90-C | GEAR, 4TH WHEEL | 1 | C |
| | 15 | 2C0-17231-80-A | GEAR, 3RD WHEEL | 1 | A |
| | 15 | 2C0-17231-70-B | GEAR, 3RD WHEEL | 1 | B |
| | 15 | 2C0-17231-90-C | GEAR, 3RD WHEEL | 1 | C |
| | 16 | 2C0-17251-71-A | GEAR, 5TH WHEEL | 1 | A |
| | 16 | 2C0-17251-80-B | GEAR, 5TH WHEEL | 1 | B |
| | 16 | 2C0-17251-90-C | GEAR, 5TH WHEEL | 1 | C |
| | 17 | 2C0-17211-80-A | GEAR, 1ST WHEEL | 1 | A |
| | 17 | 2C0-17211-90-B | GEAR, 1ST WHEEL | 1 | B |

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| * | 17 | 2C0-17211-00 | GEAR, 1ST WHEEL | 1 | C |




- Gear Ratio

| | std | A | B | C |
|---|---|---|---|---|
| 1st | 31/12 (2.583) | 37/16 (2.313) | 42/17 (2.471) | 31/12 (2.583) |
| 2nd | 32/16 (2.000) | 39/21 (1.857) | 39/20 (1.950) | 32/16 (2.000) |
| 3rd | 30/18 (1.667) | 36/23 (1.565) | 29/18 (1.611) | 30/18 (1.667) |
| 4th | 26/18 (1.444) | 25/18 (1.389) | 26/18 (1.444) | 28/19 (1.474) |
| 5th | 27/21 (1.286) | 33/26 (1.269) | 30/23 (1.304) | 27/20 (1.350) |
| 6th | 23/20 (1.150) | 25/22 (1.136) | 23/20 (1.150) | 26/22 (1.182) |

***NOTICE***

- **No gear can be used for the kit transmission except for the specified STD gear.**
- **There is no compatibility with the '06 model transmission set (2C0-A7400-70).**

**YZF-R6 Mission ratio**

| | | | Pinion gear | | | Wheel gear | | |
|---|---|---|---|---|---|---|---|---|
| GEAR | PLAN | Ratio | Part number | The number of teeth | Stamp | Part number | The number of teeth | Stamp |
| 1ST | A | 2.313 | 2C0-17411-80-A | 16 | A | 2C0-17211-80-A | 37 | A |
| | B | 2.471 | 2C0-17411-90-B | 17 | B | 2C0-17211-90-B | 42 | B |
| | C | 2.583 | 2C0-17411-00 | 12 | | 2C0-17211-00 | 31 | |
| 2ND | A | 1.857 | 2C0-17121-80-A | 21 | A | 2C0-17221-81-A | 39 | A |
| | B | 1.950 | 2C0-17121-90-B | 20 | B | 2C0-17221-90-B | 39 | B |
| | C | 2.000 | 2C0-17121-00 | 16 | | 2C0-17221-00 | 32 | |
| 3RD | A | 1.565 | 2C0-17131-80-A | 23 | A | 2C0-17231-80-A | 36 | A |
| | B | 1.611 | 2C0-17131-71-B | 18 | B | 2C0-17231-70-B | 29 | B |
| | C | 1.667 | 2C0-17131-90-C | 18 | C | 2C0-17231-90-C | 30 | C |
| 4TH | A | 1.389 | 2C0-17131-80-A | 18 | A | 2C0-17241-80-A | 25 | A |
| | B | 1.444 | 2C0-17131-71-B | 18 | B | 2C0-17241-70-B | 26 | B |
| | C | 1.474 | 2C0-17131-90-C | 19 | C | 2C0-17241-90-C | 28 | C |
| 5TH | A | 1.269 | 2C0-17151-71-A | 26 | A | 2C0-17251-71-A | 33 | A |
| | B | 1.304 | 2C0-17151-80-B | 23 | B | 2C0-17251-80-B | 30 | B |
| | C | 1.350 | 2C0-17151-90-C | 20 | C | 2C0-17251-90-C | 27 | C |
| 6TH | A | 1.136 | 2C0-17161-70-A | 22 | A | 2C0-17261-71-A | 25 | A |
| | B | 1.150 | 2C0-17161-00 | 20 | | 2C0-17261-80-B | 23 | B |
| | C | 1.182 | 2C0-17161-90-C | 22 | C | 2C0-17261-90-C | 26 | C |

Make sure that the pinion and wheel gear are combined for use according to the chart plan.

## YZF-R6 Speed List

Engine speed (rpm) 16000
Tire radius (mm) 315 perimeter (m) 1.979
Primary reduction ratio 41 85 2.073

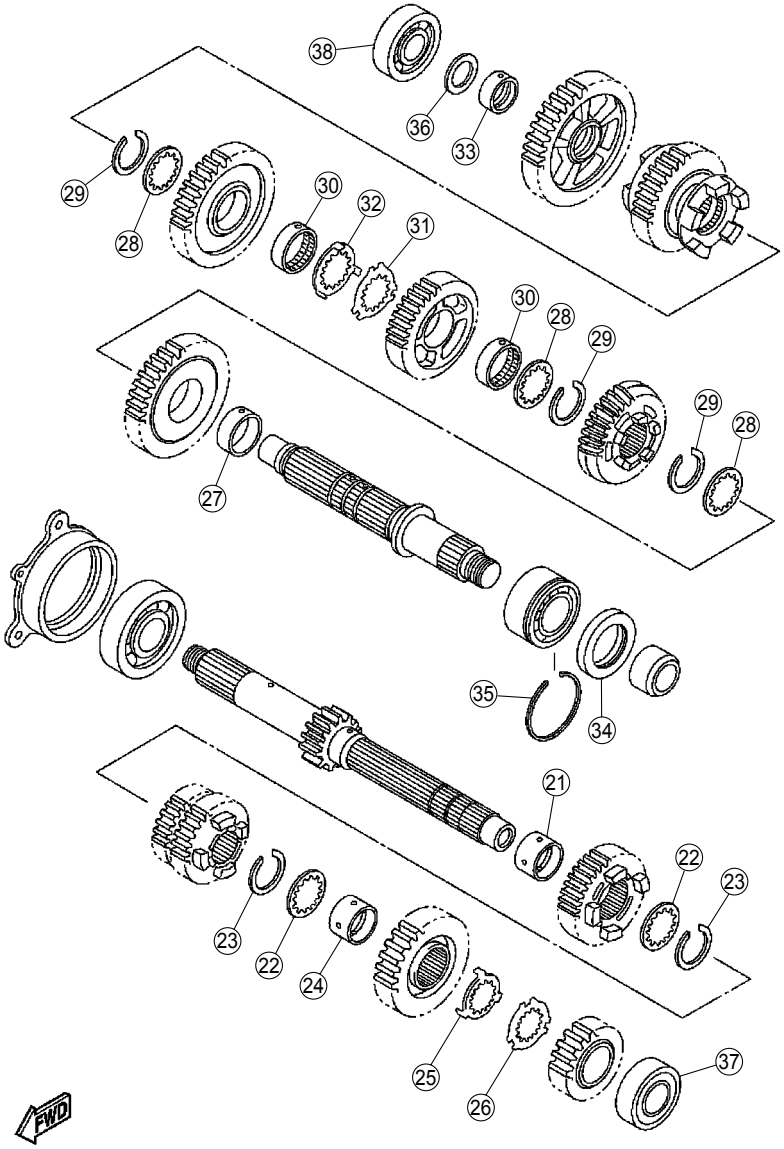
| GEAR | PLAN | The number of teeth | | Ratio | 16 | 16 | 16 | 16 | 15 | 16 | 15 | 16 | 15 | 16 | 15 | 14 | 16 | 15 | 14 | 15 | 14 | 15 | 14 | 15 | 14 | 14 | 14 | 14 | Engine side | Secondary reduction ratio (Sprocket) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | P | W | | 45 | 46 | 47 | 48 | 45 | 49 | 46 | 50 | 47 | 51 | 48 | 45 | 52 | 49 | 46 | 50 | 47 | 51 | 48 | 52 | 49 | 50 | 51 | 52 | Wheel side | |
| 1st | A | 16 | 37 | 2.313 | 140.9 | 137.9 | 134.9 | 132.1 | 132.1 | 129.4 | 129.2 | 126.8 | 126.5 | 124.3 | 123.8 | 123.3 | 121.9 | 121.3 | 120.6 | 118.9 | 118.1 | 116.6 | 115.6 | 114.3 | 113.2 | 111.0 | 108.8 | 106.7 | Speed (km/h) | |
| | B | 17 | 42 | 2.471 | 131.9 | 129.0 | 126.3 | 123.7 | 123.7 | 121.1 | 121.0 | 118.7 | 118.4 | 116.4 | 115.9 | 115.4 | 114.1 | 113.6 | 112.9 | 111.3 | 110.5 | 109.1 | 108.2 | 107.0 | 106.0 | 103.9 | 101.8 | 99.9 | | |
| | C | 12 | 31 | 2.583 | 126.1 | 123.4 | 120.8 | 118.3 | 118.3 | 115.8 | 115.7 | 113.5 | 113.2 | 111.3 | 110.9 | 110.4 | 109.2 | 108.6 | 108.0 | 106.4 | 105.7 | 104.3 | 103.5 | 102.3 | 101.4 | 99.3 | 97.4 | 95.5 | | |
| 2nd | A | 21 | 39 | 1.857 | 175.5 | 171.6 | 168.0 | 164.5 | 164.5 | 161.1 | 160.9 | 157.9 | 157.5 | 154.8 | 154.2 | 153.5 | 151.8 | 151.1 | 150.2 | 148.0 | 147.0 | 145.1 | 143.9 | 142.4 | 141.0 | 138.2 | 135.5 | 132.9 | | |
| | B | 20 | 39 | 1.950 | 167.1 | 163.5 | 160.0 | 156.7 | 156.7 | 153.5 | 153.3 | 150.4 | 150.0 | 147.4 | 146.9 | 146.2 | 144.6 | 143.9 | 143.0 | 141.0 | 140.0 | 138.2 | 137.1 | 135.6 | 134.3 | 131.6 | 129.0 | 126.5 | | |
| | C | 16 | 32 | 2.000 | 162.9 | 159.4 | 156.0 | 152.7 | 152.7 | 149.6 | 149.4 | 146.6 | 146.2 | 143.8 | 143.2 | 142.6 | 141.0 | 140.3 | 139.5 | 137.5 | 136.5 | 134.8 | 133.7 | 132.2 | 130.9 | 128.3 | 125.8 | 123.4 | | |
| 3rd | A | 23 | 36 | 1.565 | 208.2 | 203.7 | 199.3 | 195.2 | 195.2 | 191.2 | 190.9 | 187.4 | 186.9 | 183.7 | 183.0 | 182.2 | 180.2 | 179.2 | 178.2 | 175.7 | 174.4 | 172.2 | 170.8 | 168.9 | 167.3 | 163.9 | 160.7 | 157.6 | | |
| | B | 18 | 29 | 1.611 | 202.3 | 197.9 | 193.7 | 189.6 | 189.6 | 185.7 | 185.5 | 182.0 | 181.5 | 178.5 | 177.8 | 177.0 | 175.0 | 174.1 | 173.1 | 170.7 | 169.4 | 167.3 | 165.9 | 164.1 | 162.5 | 159.3 | 156.2 | 153.2 | | |
| | C | 18 | 30 | 1.667 | 195.5 | 191.3 | 187.2 | 183.3 | 183.3 | 179.6 | 179.3 | 176.0 | 175.5 | 172.5 | 171.8 | 171.1 | 169.2 | 168.3 | 167.4 | 165.0 | 163.8 | 161.7 | 160.4 | 158.6 | 157.1 | 154.0 | 151.0 | 148.0 | | |
| 4th | A | 18 | 25 | 1.389 | 234.6 | 229.5 | 224.6 | 220.0 | 220.0 | 215.5 | 215.2 | 211.2 | 210.6 | 207.0 | 206.2 | 205.3 | 203.0 | 202.0 | 200.8 | 198.0 | 196.6 | 194.1 | 192.5 | 190.3 | 188.5 | 184.8 | 181.1 | 177.7 | | |
| | B | 18 | 26 | 1.444 | 225.6 | 220.7 | 216.0 | 211.5 | 211.5 | 207.2 | 206.9 | 203.0 | 202.5 | 199.1 | 198.3 | 197.4 | 195.2 | 194.2 | 193.1 | 190.3 | 189.0 | 186.6 | 185.1 | 183.0 | 181.3 | 177.7 | 174.2 | 170.8 | | |
| | C | 19 | 28 | 1.474 | 221.1 | 216.3 | 211.7 | 207.3 | 207.3 | 203.1 | 202.8 | 199.0 | 198.5 | 195.1 | 194.3 | 193.5 | 191.4 | 190.4 | 189.3 | 186.6 | 185.2 | 182.9 | 181.4 | 179.4 | 177.7 | 174.1 | 170.7 | 167.4 | | |
| 5th | A | 26 | 33 | 1.269 | 256.7 | 251.2 | 245.8 | 240.7 | 240.7 | 235.8 | 235.5 | 231.1 | 230.5 | 226.5 | 225.7 | 224.6 | 222.2 | 221.0 | 219.8 | 216.6 | 215.1 | 212.4 | 210.6 | 208.3 | 206.3 | 202.2 | 198.2 | 194.4 | | |
| | B | 23 | 30 | 1.304 | 249.8 | 244.4 | 239.2 | 234.2 | 234.2 | 229.4 | 229.1 | 224.8 | 224.2 | 220.4 | 219.6 | 218.6 | 216.2 | 215.1 | 213.8 | 210.8 | 209.3 | 206.7 | 204.9 | 202.7 | 200.8 | 196.7 | 192.9 | 189.2 | | |
| | C | 20 | 27 | 1.350 | 241.4 | 236.1 | 231.1 | 226.3 | 226.3 | 221.7 | 221.4 | 217.2 | 216.7 | 213.0 | 212.1 | 211.2 | 208.9 | 207.8 | 206.6 | 203.7 | 202.2 | 199.7 | 198.0 | 195.8 | 194.0 | 190.1 | 186.4 | 182.8 | | |
| 6th | A | 22 | 25 | 1.136 | 286.8 | 280.5 | 274.6 | 268.8 | 268.8 | 263.3 | 263.0 | 258.1 | 257.4 | 253.0 | 252.0 | 250.9 | 248.2 | 246.9 | 245.5 | 242.0 | 240.2 | 237.2 | 235.2 | 232.6 | 230.4 | 225.8 | 221.4 | 217.1 | | |
| | B | 20 | 23 | 1.150 | 283.4 | 277.2 | 271.3 | 265.6 | 265.6 | 260.2 | 259.9 | 255.0 | 254.3 | 250.0 | 249.0 | 247.9 | 245.2 | 244.0 | 242.5 | 239.1 | 237.4 | 234.4 | 232.4 | 229.9 | 227.7 | 223.1 | 218.8 | 214.6 | | |
| | C | 22 | 26 | 1.182 | 275.7 | 269.7 | 264.0 | 258.5 | 258.5 | 253.2 | 252.9 | 248.2 | 247.5 | 243.3 | 242.3 | 241.3 | 238.6 | 237.4 | 236.0 | 232.6 | 231.0 | 228.1 | 226.2 | 223.7 | 221.6 | 217.1 | 212.9 | 208.8 | | |

- Values in the speed table may vary slightly according to tire manufacturer and size.
- Select after referring to the value in the speed table.

## 17. Mission Maintenance Set (2C0-A7000-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| * | 21 | 90387-250R3 | COLLAR | 3 | |
| * | 22 | 90209-21332 | WASHER | 6 | |
| * | 23 | 93440-25186 | CIRCLIP | 10 | |
| * | 24 | 90387-21003 | COLLAR | 3 | |
| * | 25 | 90209-22352 | WASHER | 3 | |
| * | 26 | 90209-21351 | WASHER | 3 | |
| * | 27 | 90387-28011 | COLLAR | 3 | |
| * | 28 | 90209-25011 | WASHER | 9 | |
| * | 29 | 93440-28184 | CIRCLIP | 15 | |
| * | 30 | 90387-25015 | COLLAR | 6 | |
| * | 31 | 90214-25004 | WASHER, CLAW | 3 | |
| * | 32 | 90214-25003 | WASHER, CLAW | 3 | |
| * | 33 | 90387-21004 | COLLAR | 3 | |
| * | 34 | 93102-35017 | SEAL, OIL | 3 | |
| * | 35 | 93440-52014 | CIRCLIP | 5 | |
| * | 36 | 90201-20278 | WASHER, PLAIN | 3 | |
| * | 37 | 93306-20464 | BRG. | 3 | |
| * | 38 | 93306-20464 | BRG. | 3 | |


38
36
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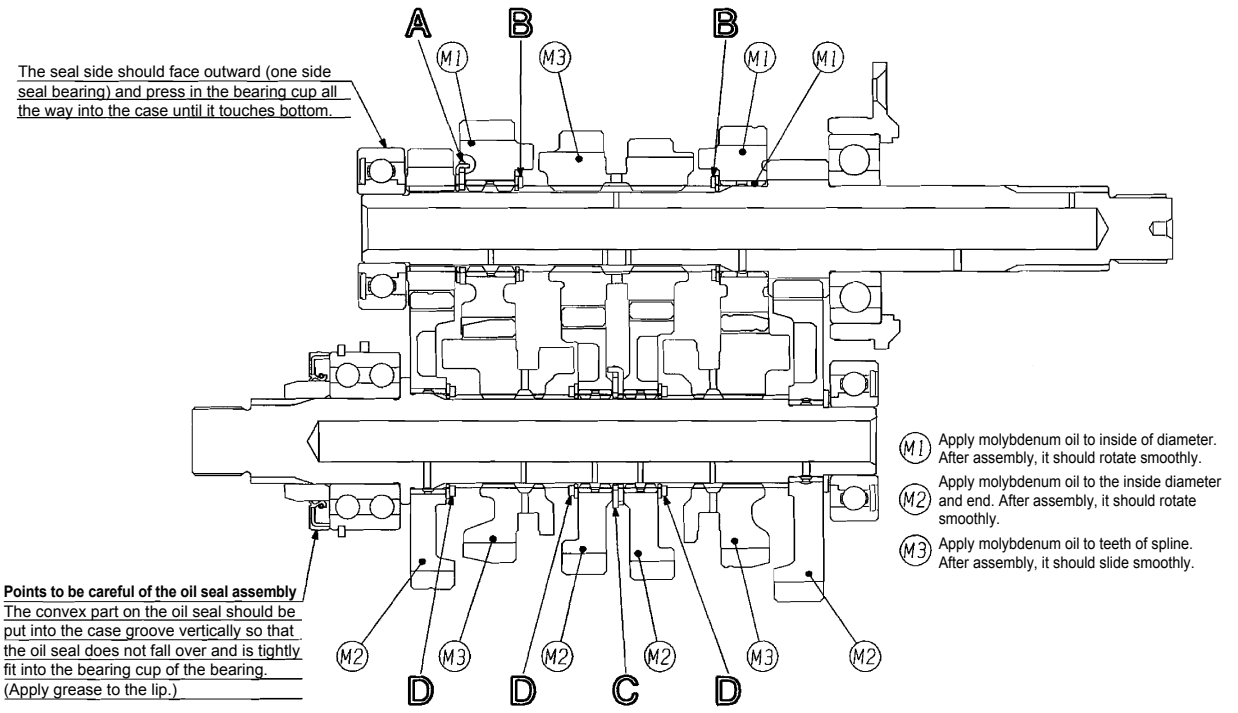
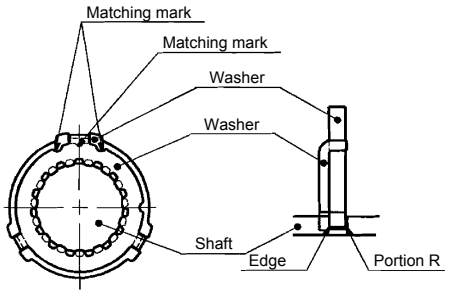
FWD

## Transmission Assembly

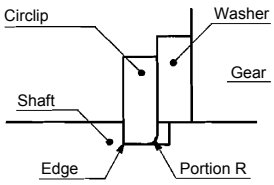

A
B
B
M1
M3
M1
M1
The seal side should face outward (one side seal bearing) and press in the bearing cup all the way into the case until it touches bottom.
M1 Apply molybdenum oil to inside of diameter. After assembly, it should rotate smoothly.
M2 Apply molybdenum oil to the inside diameter and end. After assembly, it should rotate smoothly.
M3 Apply molybdenum oil to teeth of spline. After assembly, it should slide smoothly.
Points to be careful of the oil seal assembly
The convex part on the oil seal should be put into the case groove vertically so that the oil seal does not fall over and is tightly fit into the bearing cup of the bearing. (Apply grease to the lip.)
M2
M3
M2
M2
M3
M2
D
D
C
D

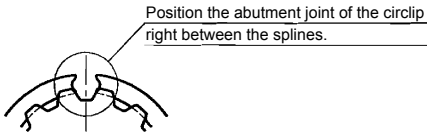
**TIP**

- **Always use a new circlip.**
- **Do not mistake the washer and circlip directions. (See drawing below.)**



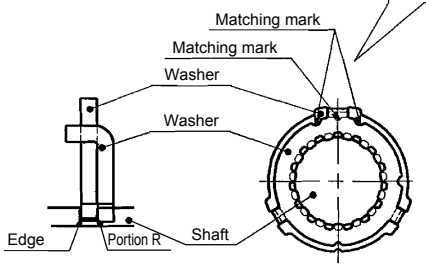

A Detail of installation of washer



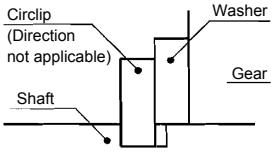



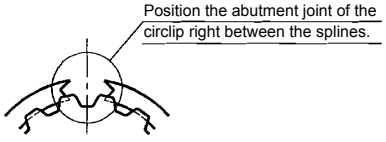

B Detail of installation of circlip

Rotate washer so that its teeth meet axle-spline teeth on the axle, and then lock with washer□s claw.
Assemble washer with putting together their matching mark.




C Detail of installation of washer




D Detail of installation of circlip

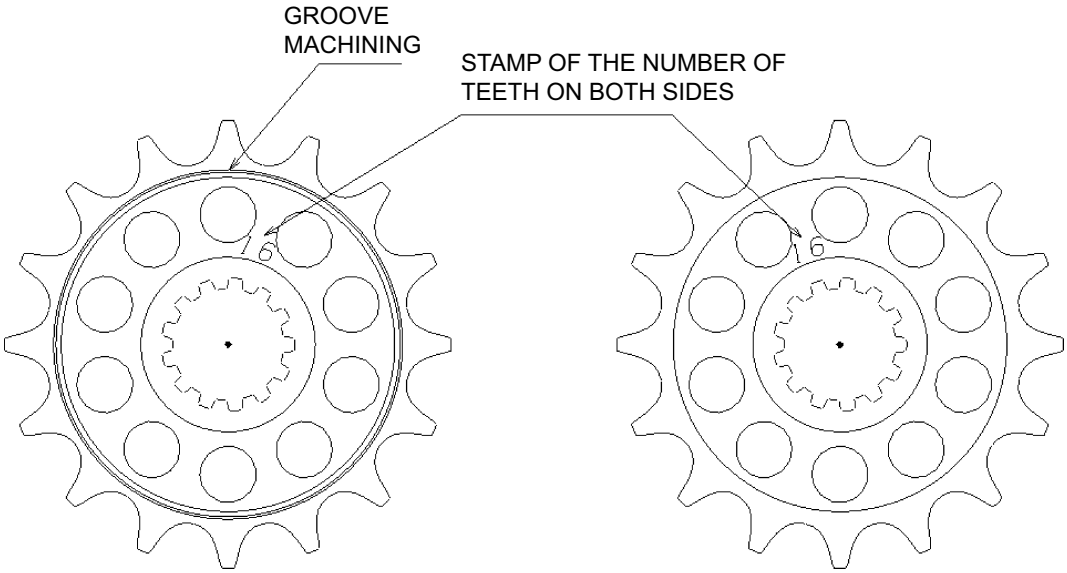
## 18. Drive Sprocket

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-17460-74 | SPROCKET, DRIVE | 1 | 14T |
| | 2 | 2C0-17460-75 | SPROCKET, DRIVE | 1 | 15T |
| | 3 | 2C0-17460-76 | SPROCKET, DRIVE | 1 | 16T |

These parts are for 520 chains (STD=525 chain).
Use the nuts for the kit to mount the drive sprocket.

These sprockets are manufactured to be compatible with new and old models.




2CO ('06 and after YZF-R6)

Install with the grooved surface facing outside of the chassis.

5SL ('05 and previous YZF-R6)

Install with the grooved surface facing inside of the chassis.

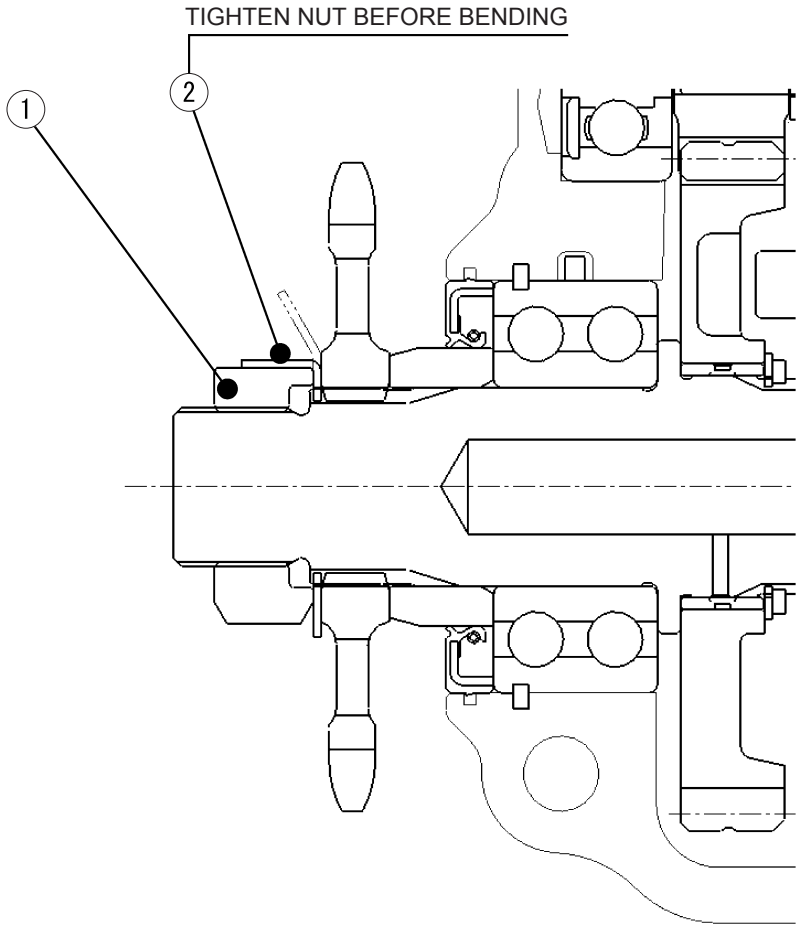
***NOTICE***

**Take care not to install the sprocket in the wrong direction. If it is installed in the wrong direction, it will cause the misalignment of the drive and rear sprockets, leading to the loss of power.**

## 19. Sprocket Nut Set (2C0-A7463-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 90179-20005 | NUT, SPROCKET | 1 | |
| * | 2 | 90215-21256 | WASHER, TONGUED | 1 | |



## 20. ACM Set (2C0-F1400-71)

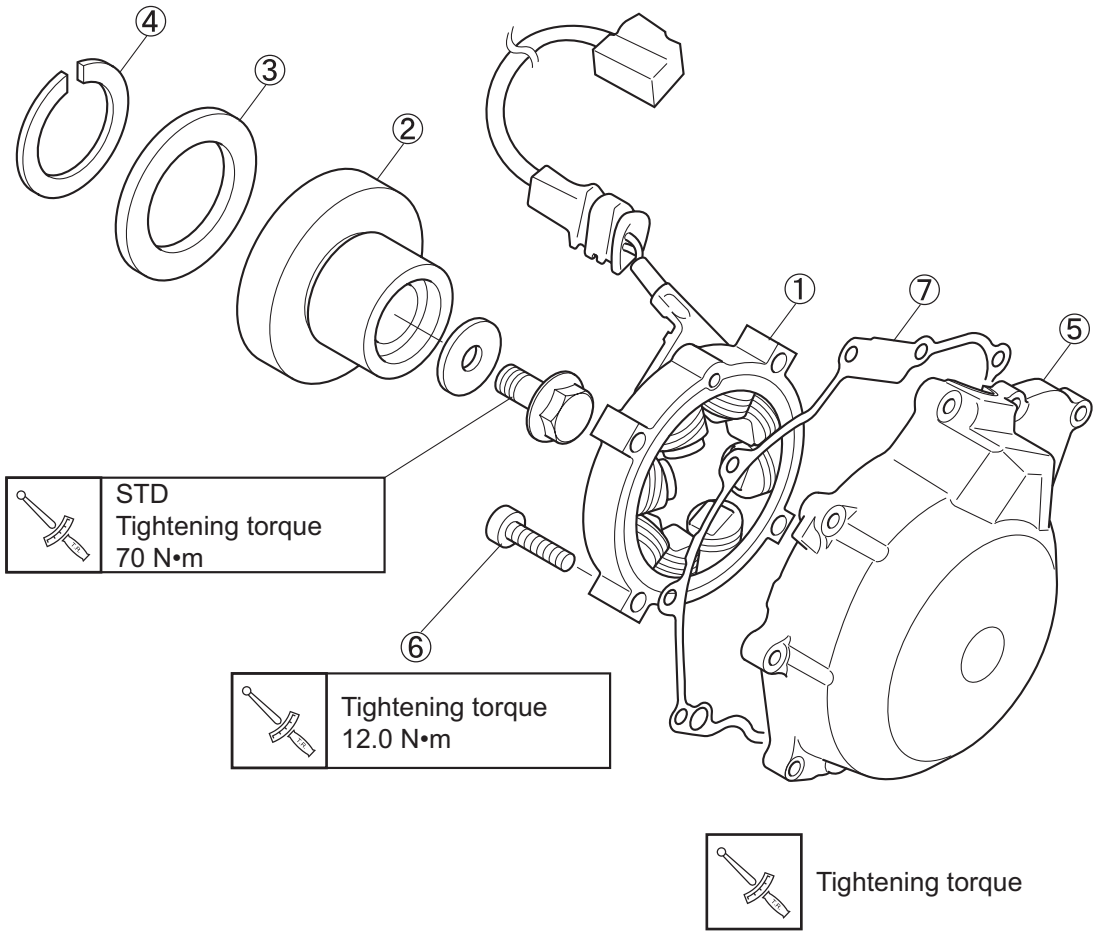
**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-81410-70 | STATOR ASSY. | 1 | |
| | 2 | 2C0-81450-70 | ROTOR ASSY. | 1 | |
| * | 3 | 2C0-15580-00 | STARTER CLUTCH OUT. ASSY. | 1 | |
| * | 4 | 2C0-15536-00 | CLIP, STARTER | 1 | |
| | 5 | 2C0-15411-71 | COVER, CRANKCASE 1 | 1 | |
| * | 6 | 90149-06080 | SCREW | 3 | With screw lock |
| | 7 | 2C0-15451-70 | GSKT., CRANKCASE COVER 1 | 1 | ANTI STICK TYPE |

**TIP**

**Regarding Assembly**

1. **Remove grease from the taper surfaces of both rotor and crank before assembling them.**
2. **Apply engine oil on the thread and flange of mounting bolts before using them.**



## 21. Wire Harness Set (13S-F2590-71)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-82590-71 | WIRE HARNESS ASSY | 1 | |
| * | 2 | 5GF-83976-00 | SW. HANDLE 1 | 1 | PIT ROAD LIMITER |
| | 3 | 14B-83976-70 | SW. HANDLE 1 | 1 | MAP SELECT |
| | 4 | 2C0-2128A-70 | BRKT.,REGULATOR 1 | 1 | |
| | 5 | 2C0-82509-70 | WIRE SUB-LEAD | 1 | |
| | 6 | 4C8-82188-70 | RESISTOR ASSY. | 1 | Linked to wire harness |
| * | 7 | 90480-13003 | GROMMET | 2 | |
| * | 8 | 90560-06201 | SPACER | 2 | |
| * | 9 | 90111-06051 | BOLT, HEX. SOCKET BUTTON | 4 | |
| * | 10 | 92907-06200 | WASHER, PLAIN | 1 | |

***NOTICE***

- **Do not remove the AC generator but leave it to function. Use on the battery alone will make the machine unable to run in a short time.**
- **The wire harness will not function if it is not assembled with the ECU (2C0-8591A-90) of the kit.**
- **The combination of this wire harness and ECU cannot be used with '07 models.**

- Map select switches Map 1 and Map 2 of the YMS "Comp. FUEL."

***NOTICE***

**When switching to Map 1 or Map 2 using "Map Select" while riding, check that proper riding is possible even when using either map.**

- You can use Map Select and Pit Road Limiter with the switches (2 types) included with this set. (See diagram 1.)

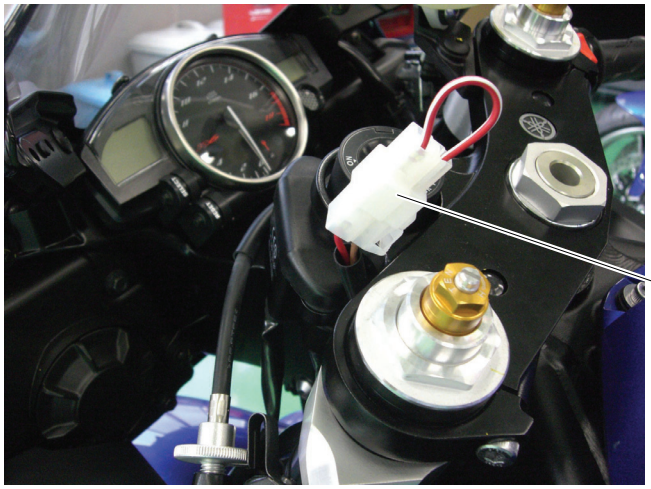
(Diagram 1)

- Use the 3-prong coupler in front with the red wire attached as the main switch. (See diagram 2.)
  Fitting it turns the power on and removing it turns the power off.

***NOTICE***

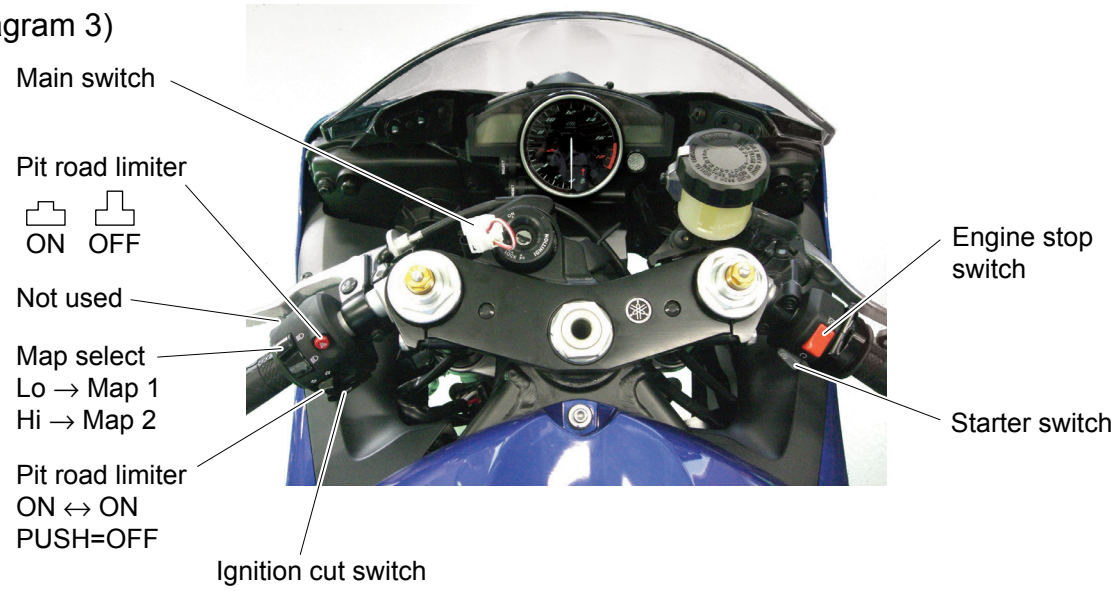
**Be careful not to pull the wire too strongly.**

(Diagram 2)




- The switch installed to the STD machine may be used as is. (See diagram 3.)

(Diagram 3)



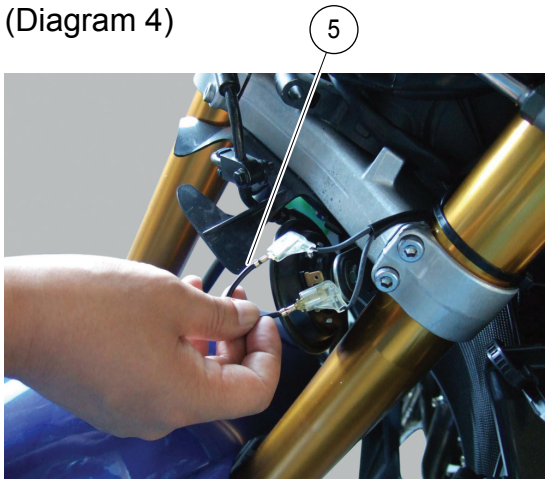
- The ignition cut switch function can be used by combining the harness and kit ECU.
  ① To use the STD switch (left side) to function as the ignition cut switch, connect the wire sub-lead that was packaged with this set to the terminal that is normally connected to the left side horn. (See diagram 4.) If you remove the resistor assy. at the tail side, the ignition cut switch may malfunction in wet weather. (See diagram 5.)

***NOTICE***

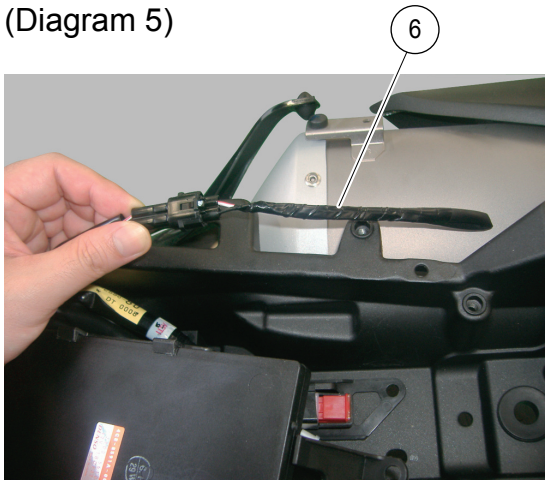
**Do not bend the resistor assembly. It will cease to function if it is bent.**

② Install the switch to the 2-pin black coupler underneath the fuel tank. Turning the switch ON cuts the ignition.

(Diagram 4)




(Diagram 5)



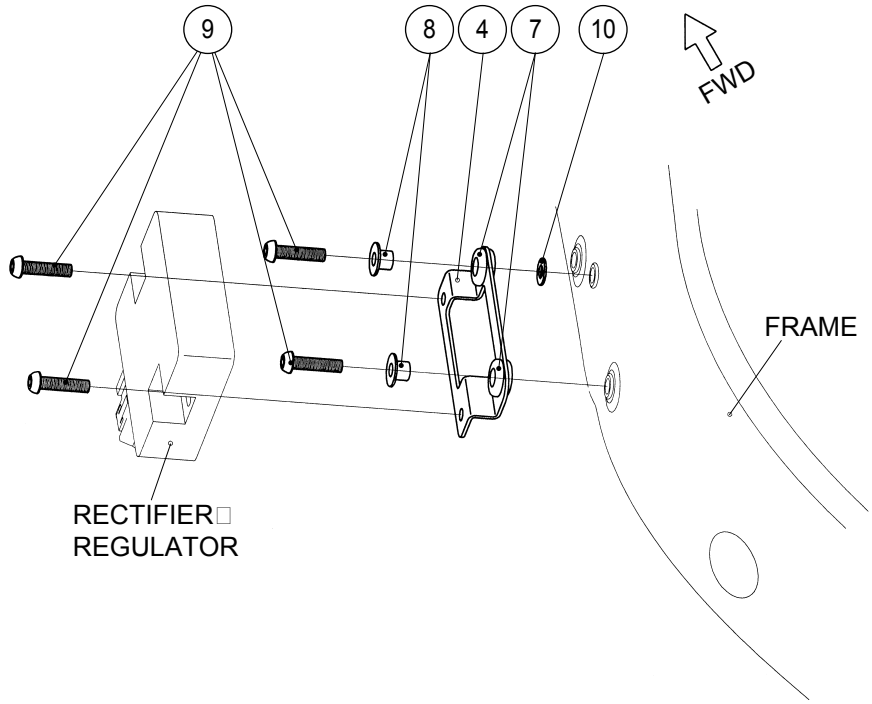

***NOTICE***

**Do not connect the coupler for resistor (black, 2-prong) and the coupler for power (white, 2-prong). Connecting them may cause a malfunction. (See diagram 6.)**

(Diagram 6)

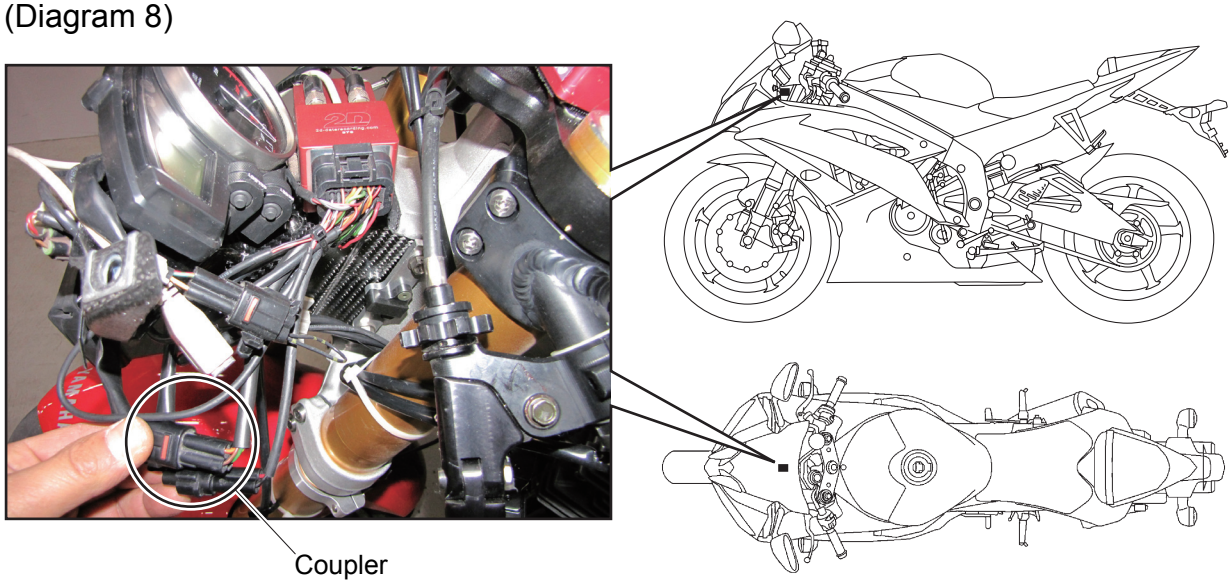
- The bracket regulator provided with this set is for use when fitting a regulator in the position illustrated in Diagram 7, such as when not using a standard radiator.

(Diagram 7)



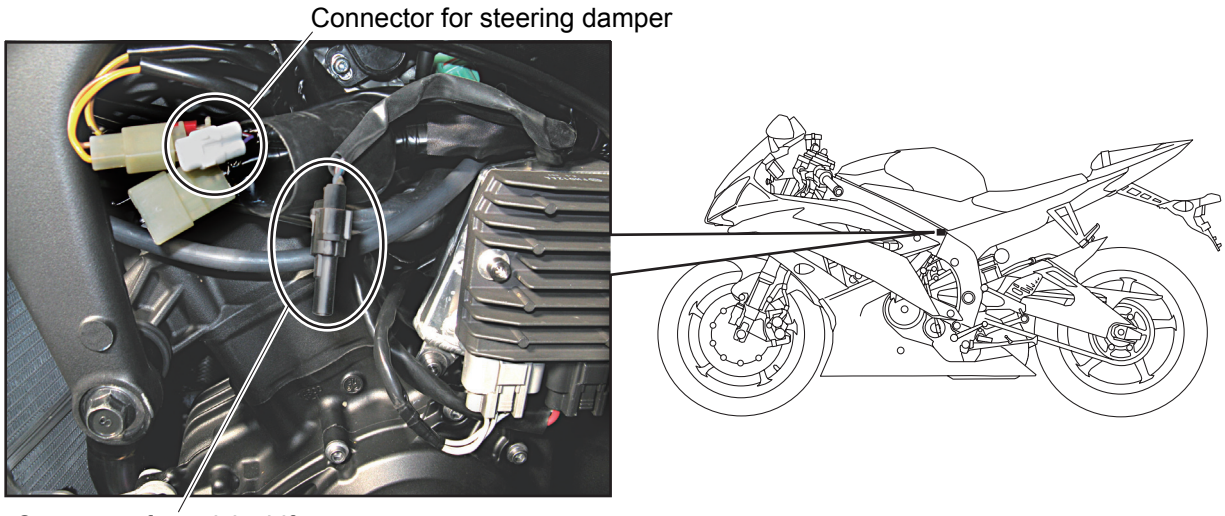

- This harness has a coupler that connects to the 2D made data logger. (See diagram 8.)
  For details of the specifications of the data logger, please access the website.
  Web http://www.2d-kit-system.com/

(Diagram 8)



- This harness comes with a coupler (black 2-pole, plug) for use with a quick shifter. (Connection diagram ⑭ E/G STP SW) (Diagram 9)
  You can use any quick shifter product.

(Diagram 9)

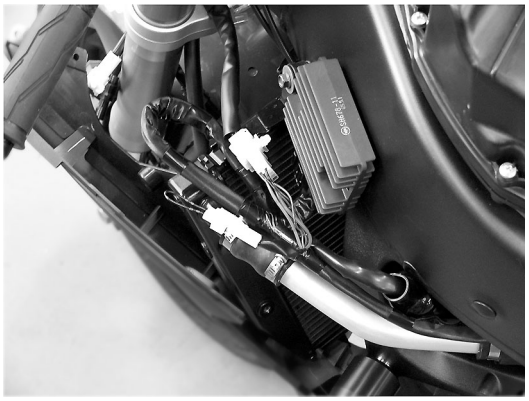


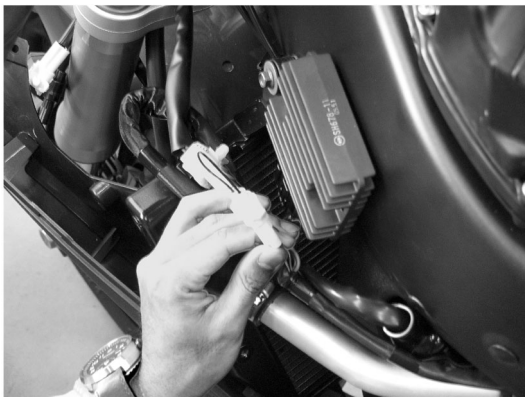
## 22. ECU Set (2C0-8591A-91)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-8591A-91 | ECU | 1 | |
| | 2 | 13S-2818Y-81 | CD | 1 | YMS, MANUAL |

- Use of this set and a wire harness included in the kit enables regulation (or setting) of fuel injection and ignition timing, etc.
- For details as to how to regulate (or set) fuel injection and ignition timings, etc., refer to the manual in the CD-ROM that comes with the set.
- There are two types of basic control data for the ECU included in this set: SS (Super Sports) and ST (Stock Sports). They can be switched over and vice versa. To make it in the ST specification, just remove two couplers located at the lower left of the kit harness fuel tank. (See the figure below.)
  <Setting-up Details>
  SS specification: Kit cam shaft and *Recommended muffler
  ST specification: *Recommended muffler
  * Recommended muffler
    Made by Akrapovic (For details of the specification, please access the website.)
    Web http://www.akrapovic-exhaust.com/





| MODEL | ECU | WIRE HARNESS ASSY. | THROTTLE BODY ASSY. |
|---|---|---|---|
| 2006 | 2C0-8591A-70 | 2C0-82590-70 | 2C0-13750-00 |
| 2007 | 2C0-8591A-71 | 2C0-82590-80 | |
| 2008 | 2C0-8591A-80<br>2C0-8591A-90<br>2C0-8591A-91 | 13S-82590-70<br>13S-82590-71 | 13S-13750-00 |
| 2009 | | | |
| 2010 | | | |

*2008, 2009, and 2010 models allow any combination of ECU and wire harness. Other models only allow the combinations shown in the table.

## 23. Cable Interface (13S-8533A-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-8533A-70 | CABLE, INTERFACE | 1 | USB |
| | 2 | 13S-N81CD-70 | 8cm CD | 1 | USB driver |

- This cable connects the kit wire harness to the personal computer on which YEC FI Matching System (YMS) is installed.
- Please see the YMS manual for instructions on how to use YMS.
- When connecting the cable to the PC for the first time, it is necessary to install the USB driver. Refer to the USB Driver Installation Manual provided on the 8 cm CD for details on how to install the USB driver.
- The product vendor ID and product ID are provided by the Hamamatsu TOA Electronics, Inc.
  Vendor ID: 6837
  Product ID: 9001

- Use of the ECU in the kit and the harness allows functioning of the following codes in the STD diagnosis.

  * YMS-Monitor: YEC FI Matching System also allows functioning of the code shown below.

<Diagnosis Functions>

| CODE | Contents | *YMS-Monitor |
|---|---|---|
| 01 | Throttle sensor | TPS 1(deg) |
| 02 | Atmospheric pressure sensor | Atmospheric (kPa) |
| 03 | Intake pressure sensor 1 | Intake Air (kPa) |
| 05 | Intake temperature sensor | Air Temp. (°C) |
| 06 | Water temperature sensor | Water Temp. (°C) |
| 07 | Vehicle speed sensor | Speed Signal (--) |
| 08 | Overturn sensor | Lean Angle Signal (V) |
| 09 | Monitor voltage | System Voltage (V) |
| 13 | Throttle sensor 2 | TPS 2 (deg) |
| 14 | Accelerator sensor 1 | APS 1 (deg) |
| 15 | Accelerator sensor 2 | APS 2 (deg) |
| 21 | Neutral switch | Neutral SW |
| 30 | Ignition coil #1 | — |
| 31 | Ignition coil #2 | — |
| 32 | Ignition coil #3 | — |
| 33 | Ignition coil #4 | — |
| 36 | Injector (primary) #1 | — |
| 37 | Injector (primary) #2 | — |
| 38 | Injector (primary) #3 | — |
| 39 | Injector (primary) #4 | — |
| 40 | Injector (secondary) #1 | — |
| 41 | Injector (secondary) #2 | — |
| 42 | Injector (secondary) #3 | — |
| 43 | Injector (secondary) #4 | — |
| 46 | Intake funnel | — |
| 50 | Main relay | — |
| 70 | Program version | — |

Self-Diagnosis Functions

- The ECU and harness in the kit provide the functions for the following codes of standard self-diagnosis:

| CODE | Description |
|---|---|
| 00 | All functions normally. |
| 11 | Cam angle sensor malfunctions. |
| 12 | Crank angle sensor malfunctions. |
| 13 | Intake pressure sensor malfunctions (open circuit / short circuit). |
| 14 | Intake pressure sensor malfunctions (piping system). |
| 15 | Throttle opening sensor malfunctions (open circuit / short circuit / ETV). |
| 20 | Intake pressure sensor or atmospheric pressure sensor malfunctions. |
| 21 | Water temperature sensor malfunctions (open circuit / short circuit). |
| 22 | Intake temperature sensor malfunctions (open circuit / short circuit). |
| 23 | Atmospheric pressure sensor malfunctions (open circuit / short circuit). |
| 33 | Ignition coil #1 malfunctions (open circuit). |
| 34 | Ignition coil #2 malfunctions (open circuit). |
| 35 | Ignition coil #3 malfunctions (open circuit). |
| 36 | Ignition coil #4 malfunctions (open circuit). |
| 39 | Injector (primary) malfunctions (open circuit). |
| 40 | Injector (secondary) malfunctions (open circuit). |
| 43 | Battery voltage monitor malfunctions (power source for fuel system). |
| 46 | Power source for vehicle malfunctions. |
| 59 | Accelerator opening sensor malfunctions (open circuit / short circuit). |
| 60 | Throttle motor malfunctions (drive system). |

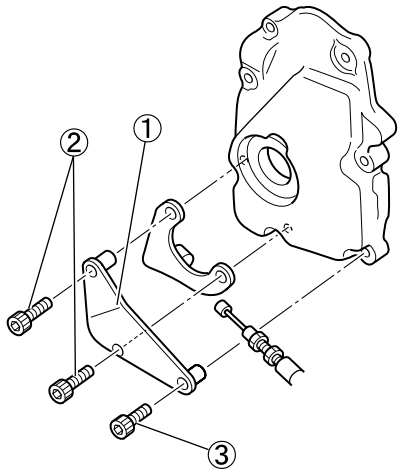
# 2-2 Vehicle Accessories

## 24. Engine Protector Set (2C0-A5491-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-15491-70 | PROTECTOR | 1 | |
| * | 2 | 91314-06025 | BOLT, HEX. SOCKET HEAD | 2 | |
| * | 3 | 91314-06020 | BOLT, HEX. SOCKET HEAD | 1 | |

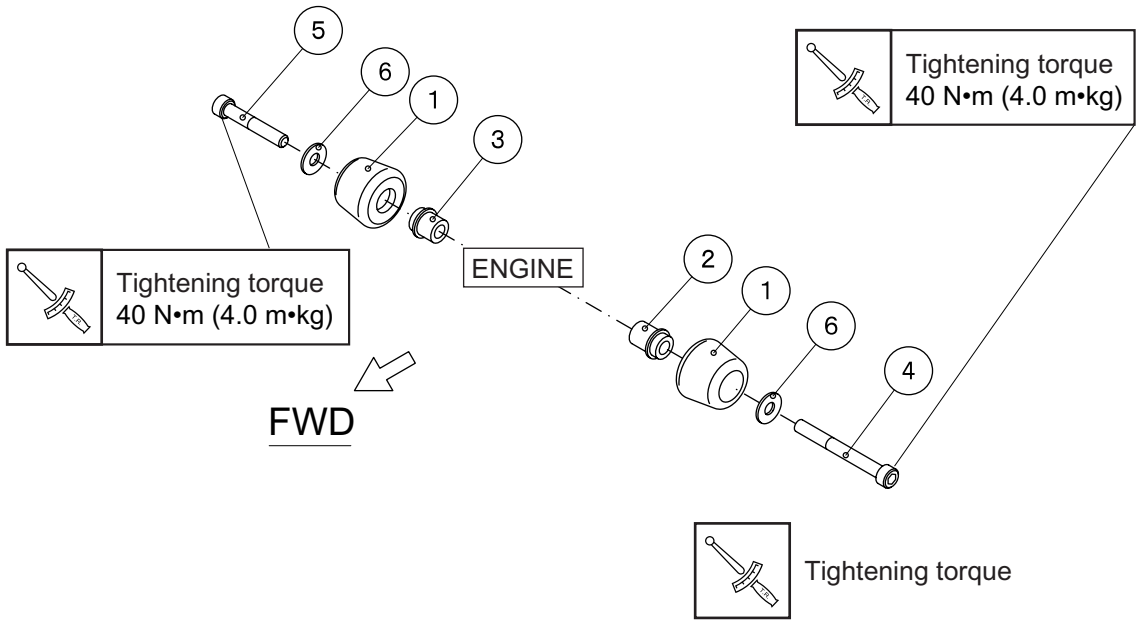
These parts protect the chassis as well as alleviating damage caused by overturning.

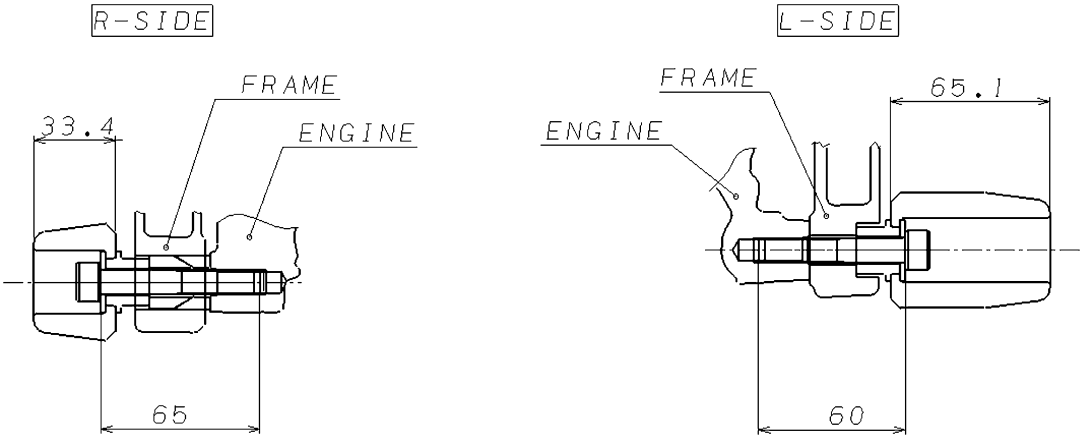


## 25. Chassis Protector Set (2C0-C117G-70)

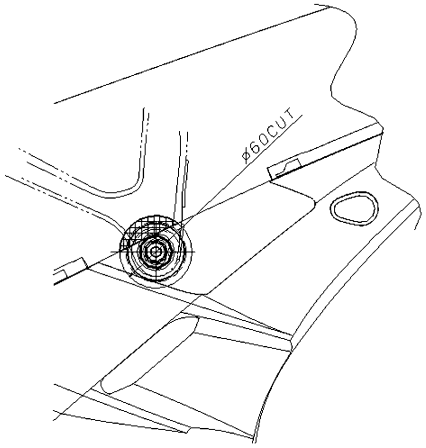
**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-2117G-70 | PROTECTOR(LH LONG) | 1 | |
| | 2 | 2C0-2117G-90 | PROTECTOR(RH SHORT) | 1 | |
| | 3 | 2C0-21472-70 | COLLAR, PROTECTOR | 2 | |
| * | 4 | 91317-10060 | BOLT, HEX. SOCKET HEAD | 1 | |
| | 5 | 91314-10065 | BOLT, HEX. SOCKET HEAD | 1 | |
| * | 6 | 90201-10136 | WASHER, PLAIN | 2 | |

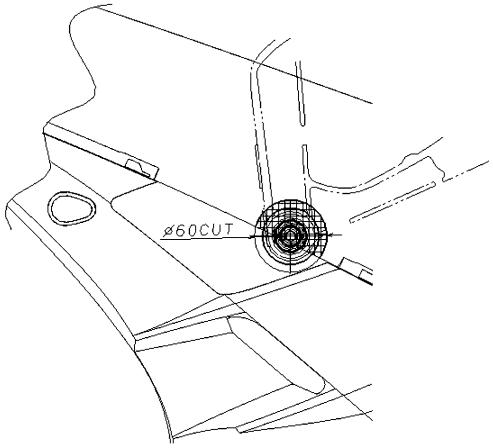


Before mounting the protector, cut the cowling so that the protector can fit against the chassis. As a rough guide, cut by $\phi$60 centered on the engine mount. See the figures below.




R-SIDE



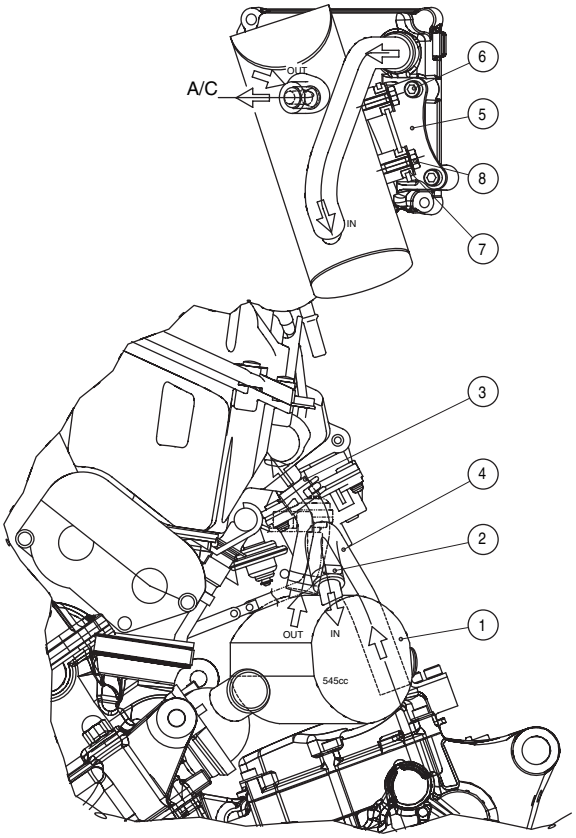

L-SIDE

## 26. Oil Catch Tank Set (2C0-C1707-81)

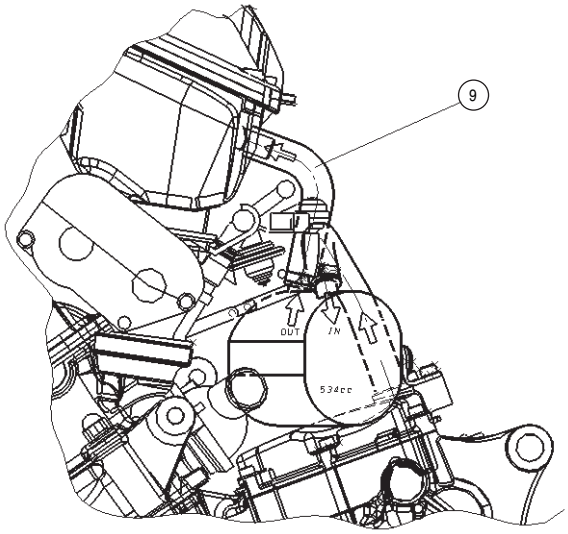
**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-21707-70 | OIL TANK COMP. | 1 | |
| * | 2 | 90450-25037 | HOSE CLAMP ASSY. | 4 | |
| | 3 | 13S-15373-70 | PIPE, BREATHER | 1 | |
| | 4 | 2C0-15393-70 | PIPE, BREATHER 2 | 1 | |
| * | 5 | 2C0-2419F-00 | BRKT. | 1 | |
| * | 6 | 91317-06020 | BOLT, HEX.SOCKET HEAD | 2 | |
| * | 7 | 90480-13018 | GROMMET | 2 | |
| * | 8 | 90119-06044 | BOLT, HEX. W/WASHER | 2 | |
| | 9 | 2C0-15373-70 | PIPE, BREATHER | 1 | For 2006 and 2007 models |

This oil tank has the effective capacity of 540 cc.




For 2008 and 2009 models




For 2006 and 2007 models

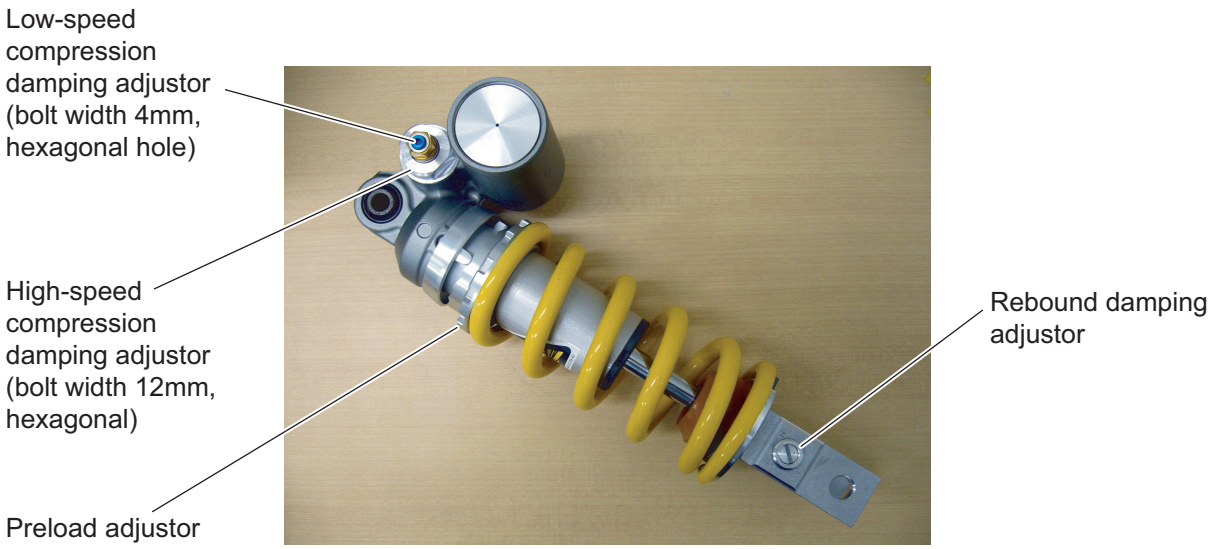
## 27. Rear Suspension

### Parts List

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-22210-71 | SHOCK ABSORBER, Rr. | 1 | 98 N/mm |

### Rear Suspension Performance Adjustment Method

Low-speed compression damping, high-speed compression damping, rebound damping and preload can be adjusted.


Low-speed compression damping adjustor (bolt width 4mm, hexagonal hole)
High-speed compression damping adjustor (bolt width 12mm, hexagonal)
Preload adjustor
Rebound damping adjustor

### Preload Adjustment Method

Turn the adjustor clockwise to increase the preload and anticlockwise to reduce the preload.

The adjustment range is 8mm (in steps of 1mm)

Shipping position: Tightened 4 steps from the preload minimum position (fifth step)

**Rebound Damping Adjustment Method**

Turn clockwise to increase the damping force and anticlockwise to reduce the damping force.
The adjustment range is between 3 to 20 steps back from the lightly tightened adjustor position.

Shipping position: 15 steps back from the tightened adjustor position

***NOTICE***

**When tightening the adjustor, do it lightly. Over-tightening the adjustor can damage it.**

**Compression Damping Adjustment Method**

**At Low Speeds**

Turn clockwise to increase the damping force and anticlockwise to reduce the damping force.
The adjustment range is 1 to 20 steps back from the lightly tightened adjustor position.

Shipping position: 15 steps back from the tightened adjustor position

***NOTICE***

**When tightening the adjustor, do it lightly. Over-tightening the adjustor can damage it.**

**At High Speeds**

Turn clockwise to increase the damping force and anticlockwise to reduce the damping force.
The adjustment range is 4 steps back from the lightly tightened adjustor position.

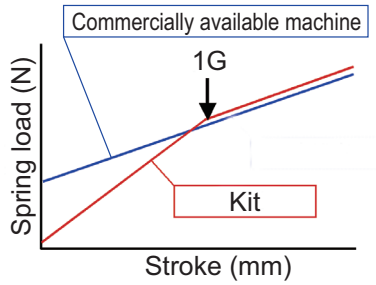
Shipping position: 3 turns back from the tightened adjustor position

***NOTICE***

**When tightening the adjustor, do it lightly. Over-tightening the adjustor can damage it.**

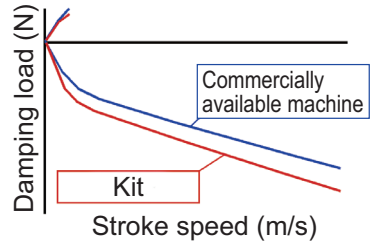
**Performance and purpose of kit suspension (Differences compared with standard suspension on commercially available machines)**

**Spring characteristics**

| | | | |
|---|---|---|---|
| Commercially available machine specs | Purpose | To increase comfort when riding in urban areas while preventing bottoming even with two people on the bike. |  |
| | Performance/characteristics | Combination of springs and bump rubbers. | |
| | Problem with circuit | Easy to fully extend when braking. (high preload.) | |
| | | Road-holding property of rear tire is easily lost during braking; rear tire behavior (hopping, sliding, etc.) easily occurs. | |
| Kit suspension specs | Addition of a rebound spring near full extension alleviates the above problem. | | |



**Damping force characteristics**

| | | | |
|---|---|---|---|
| Commercially available machine specs | Purpose | To maintain comfort when riding in urban areas and improve road-holding properties when banking into bends. |  |
| | Performance/characteristics | Limits reaction force to the minimum required damping load. | |
| | Problem with circuit | Reduces machine stability. (excessive movement when accelerating, passing over a gap, etc.) | |
| | | Reduces turning performance (stroke volume is excessive and the rear of the machine is lower than the front) | |
| Kit suspension specs | Limits excessive dipping by increasing the damping force on the compression side. | | |



**Others**

| | | | |
|---|---|---|---|
| Kit suspension specs | Change in total length | Being assembled with a rebound spring, the kit suspension raises the road-holding property of the rear tire when braking. (The total length is changed according to the rebound spring setting.) | R1:293mm (STD:290mm)<br>R6:287mm (STD:290mm) |

*Spring load: Depends on the stroke.  Damping force: Depends on the stroke speed.

## 28. Rear Shock Spring

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-22222-70 | SPRG., Rr. SHOCK | 1 | 103 N/mm<br>Identifying stamp: 165-55-103 |
| | 2 | 13S-22222-75 | SPRG., Rr. SHOCK | 1 | 98 N/mm<br>Identifying stamp: 165-55-98 |
| | 3 | 13S-22222-80 | SPRG., Rr. SHOCK | 1 | 93 N/mm<br>Identifying stamp: 165-55-93 |

- These springs can be used with the standard or kit shock absorbers.
- There is a stamp on the side of the springs for rate identification.
- The stamp number indicates the length, diameter and rate.
- For spring replacement, see the 13S STD. Service Manual.
- The spring rate of the standard rear suspension is 103 N/mm.

## 29. Front Fork

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-23102-70 | Fr. FORK ASSY. LH | 1 | 9.5 N/mm |
| | 2 | 13S-23103-70 | Fr. FORK ASSY. RH | 1 | 9.5 N/mm |

**Front Fork Performance Adjustment Method**

Compression low-speed damping, compression high-speed damping, rebound damping and preload can be adjusted.

**Preload Adjustment Method**

Turn clockwise to increase the preload and anticlockwise to reduce the preload.
The adjustment range is 15mm (1mm/turn)

Shipping position: Tightened 6 turns from the preload minimum position

**Damping Adjustment Method**

Turn clockwise to increase the damping force and anticlockwise to reduce the damping force.
The adjustment range is:

Rebound : 1 to 25 steps back from the adjustor's clockwise lightly tightened position.
Compression low speeds : 1 to 20 steps back from the adjustor's clockwise lightly tightened position.
Compression high speeds: 4 turns back from the adjustor's clockwise lightly tightened position.

Shipping position:

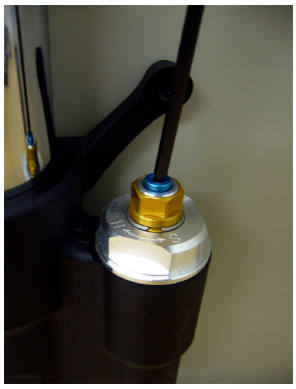
Rebound : 20 steps back from the tightened adjustor position.
Compression low speeds : 10 steps back from the tightened adjustor position.
Compression high speeds: 2 turns back from the tightened adjustor position.

***NOTICE***

**When tightening the adjustor, do it lightly. Over-tightening the adjustor can damage it.**

Rebound damping adjustor

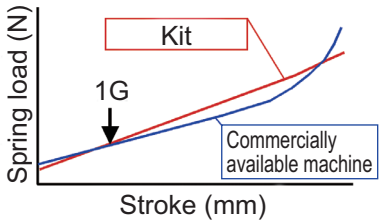
Compression low-speed damping adjustor



Compression high-speed damping adjustor

**Performance and purpose of kit suspension (Differences compared with standard suspension on commercially available machines)**

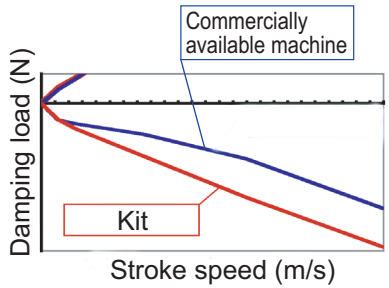
**Spring characteristics**

| | | | |
|---|---|---|---|
| Commercially available machine specs | Purpose | To increase comfort when riding in urban areas while preventing bottoming when suddenly riding over a gap while banking on a bend. |  |
| | Performance/characteristics | At the lowest possible spring setting, the air spring effect is increased depending on the oil level. | |
| | | An oil lock mechanism is fitted for the purpose of preventing bottoming (metal contact). | |
| | Problem with circuit | Instability caused by excessive front dip movement during the initial braking period. | |
| | | Stroke cannot be used up. (Stroke stops sharply in the second half of braking.) | |
| Kit suspension specs | Linear spring characteristic can use up the entire range of the stroke while exerting the hold of the initial braking period. | | |



*Spring load: Depends on the stroke.

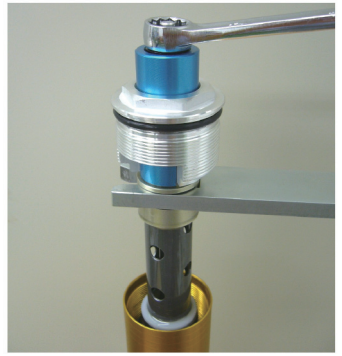
**Damping force characteristics**

| | | | |
|---|---|---|---|
| Commercially available machine specs | Purpose | To maintain comfort when riding in urban areas and improve road-holding properties when banking into bends. |  |
| | Performance/characteristics | Set the lowest possible damping force. | |
| | Problem with circuit | Instability caused by excessive front dip movement during the initial braking period. | |
| | | Reduces machine stability. (excessive movement when accelerating, passing over a gap, etc.) | |
| Kit suspension specs | By ensuring a damping force on the compression side, the kit enables the rider to change the machine attitude gently and improves convergence when riding over a gap. | | |



*Damping force: Depends on the stroke speed.

**Others**

| | | | |
|---|---|---|---|
| Kit suspension specs | TiO coating inner tubes adopted | Improves durability and lowers friction. |  |
| | Spring support method changed | Improves spring replacement operation. (Special tool included.) | |
| | Bottoming rubber adopted | Improves gap absorbability during braking. | |

## 30. Front Fork Spring

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-23151-70 | SPRG., Fr. FORK | 1 | 10.5 N/mm<br>Identifying slits 3 |
| | 2 | 13S-23151-75 | SPRG., Fr. FORK | 1 | 10.0 N/mm<br>Identifying slits 2 |
| | 3 | 13S-23151-80 | SPRG., Fr. FORK | 1 | 9.5 N/mm<br>Identifying slits None |
| | 4 | 13S-23151-85 | SPRG., Fr. FORK | 1 | 9.0 N/mm<br>Identifying slits 1 |

- There are slits at the ends of the spring for rate identification.
- The number of slits indicates the rate as shown above.
- When using an optional spring for the STD fork, replace the supplied preload tube with the set.

***NOTICE***

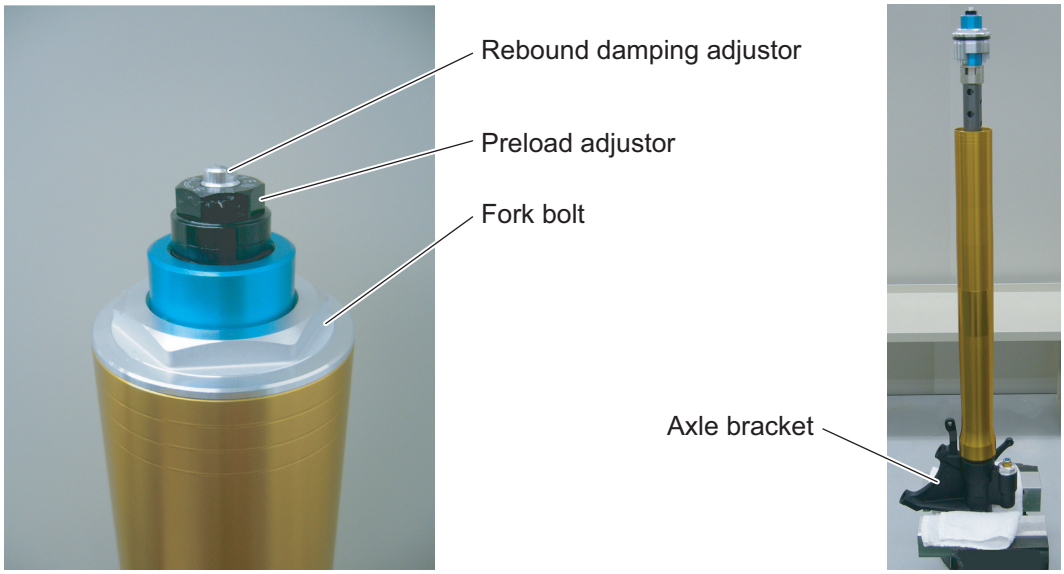
**When using an optional spring for the kit fork, you do not need to replace the preload tube. Use the original tube fitted to the fork.**

**TIP**

- **A spanner (SPECIAL TOOL) and rod (SPECIAL TOOL) are supplied with the front fork (13S-23102-70).**
- **Use Yamaha M1 suspension oil.**

**Front Fork Spring Replacement Method**

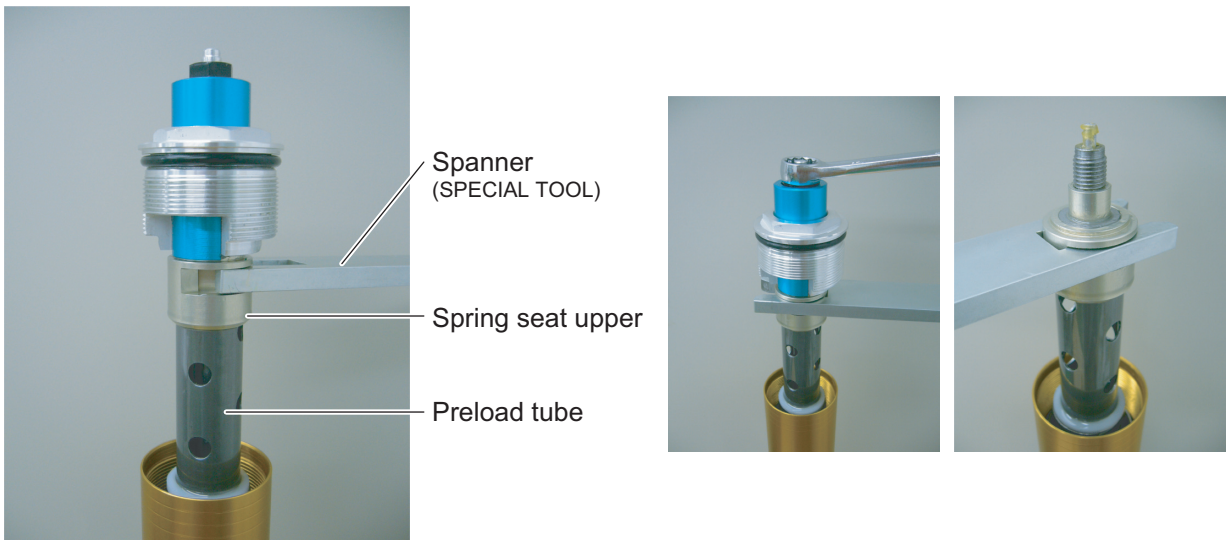
1. Turn the damping adjustor and preload adjustor anticlockwise to set to the weakest position.
2. After fixing the axle bracket in a vice, turn the fork bolt anticlockwise to lower the outer tube until the dust seal touches the upper surface of the axle bracket.



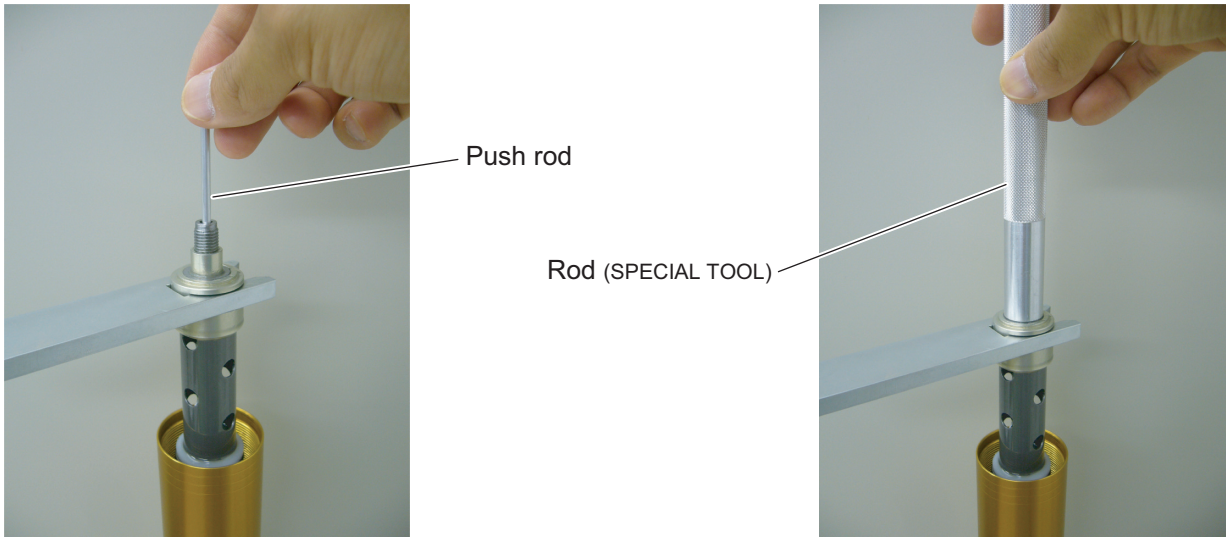

3. Insert the spanner (SPECIAL TOOL) into the notch of the spring seat upper and clamp the 14mm special nut.
4. Use a 14mm box spanner on the preload adjustor to remove the cap bolt assembly.

***NOTICE***

**Do not remove the spanner (SPECIAL TOOL) while doing this.**



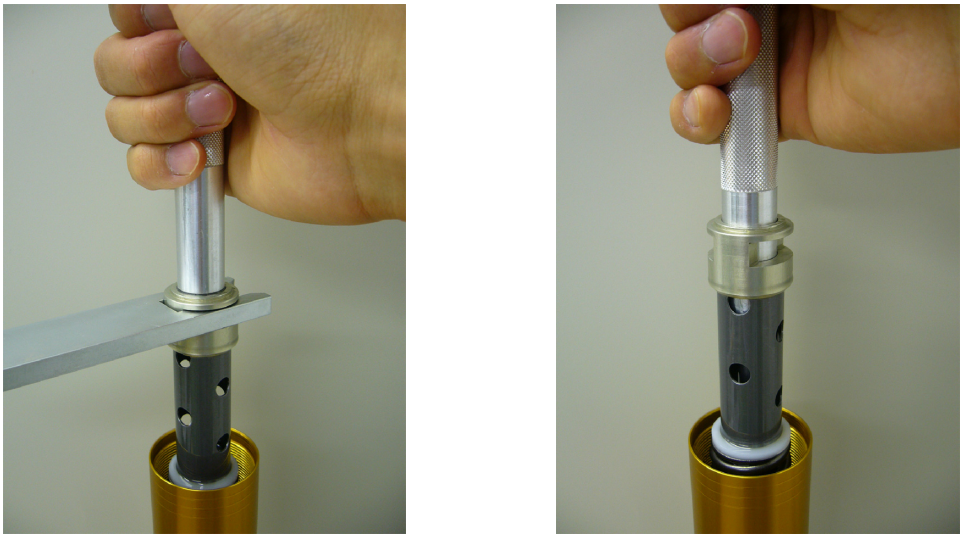
5. Remove the push rod and fit the rod (SPECIAL TOOL) to the piston rod.




6. Grip the rod (SPECIAL TOOL) firmly and remove the spanner (SPECIAL TOOL).

***NOTICE***

**Be very careful to apply downward pressure on the rod (SPECIAL TOOL) when you remove the spanner (SPECIAL TOOL).**

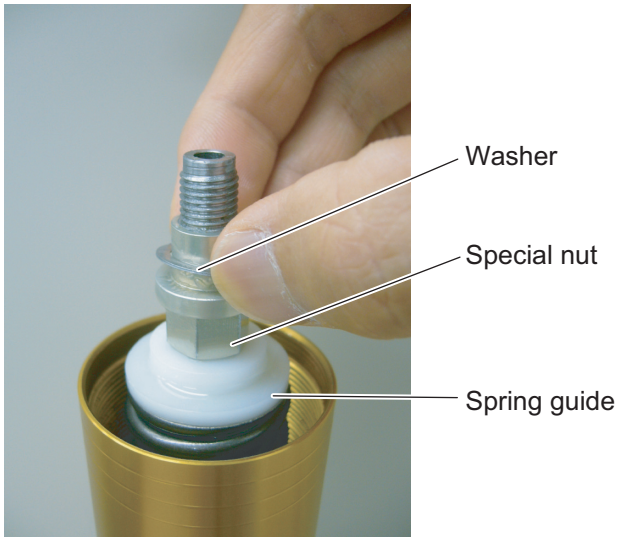


7. Remove the spring seat upper and preload tube before removing the rod (SPECIAL TOOL).

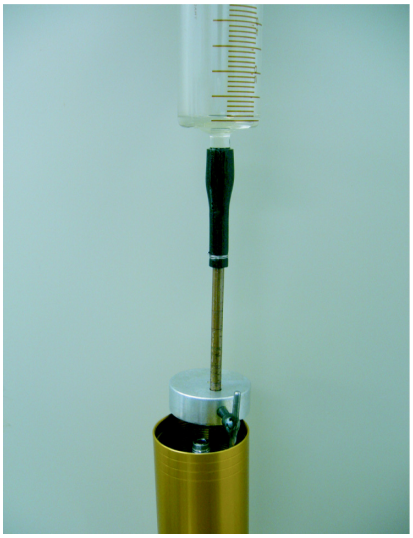
8. Remove the washer, special nut and spring guide and replace the spring.

***NOTICE***

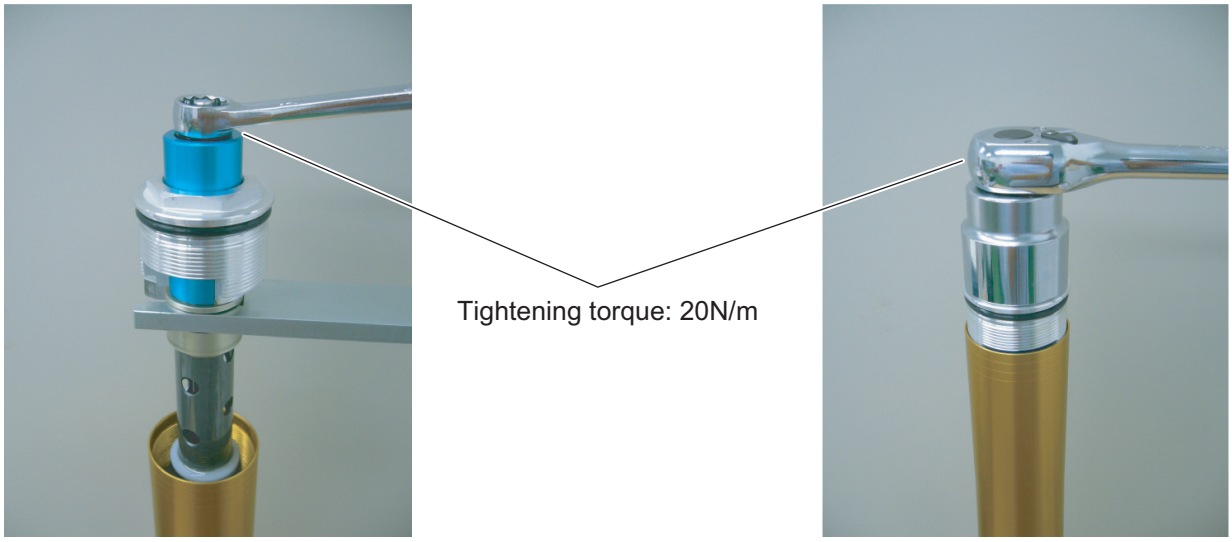
**When replacing the spring, fit the new spring with the tapered closed end upwards.**



9. Press the rod downwards before adjusting the oil level.
   - Oil level in load state: With the spring removed and the outer tube and rod lowered, 140mm from the top of the outer tube.

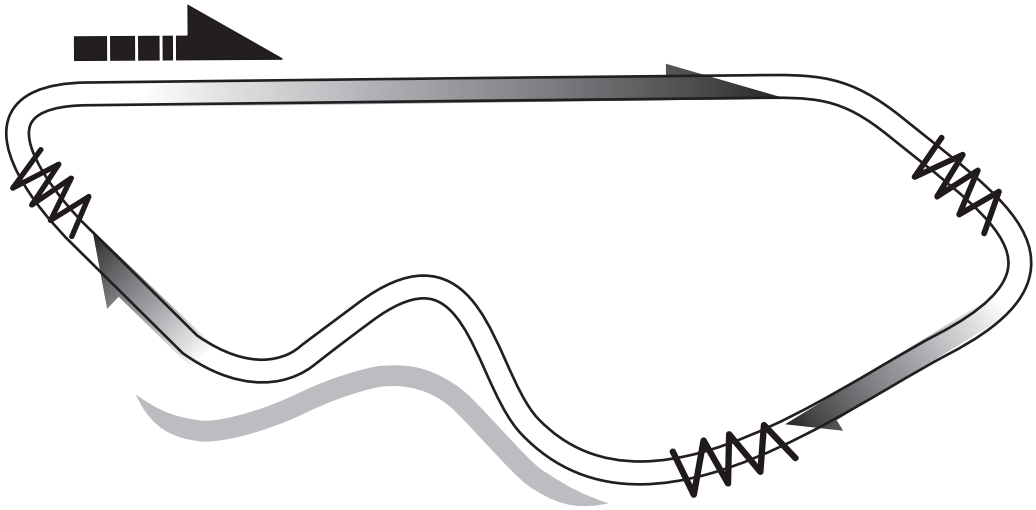


10. Reassemble the parts after oil level adjustment by following the disassembly procedure in reverse.



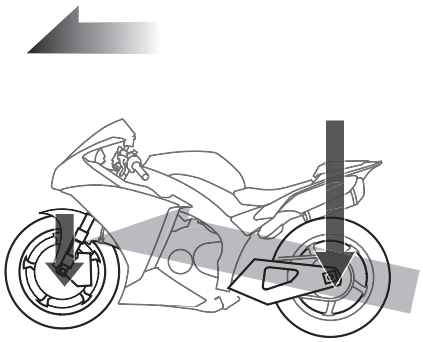
## References

**Front and rear load changes and front and rear suspension movement in different scenarios.**



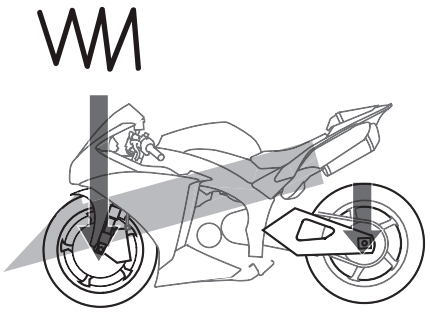
**Accelerating**

· Load change
The wider the throttle is opened, the more the load is concentrated on the rear.
· Front fork
Reaches nearly maximum extended stroke.
· Rear cushion
Up to 20 to 30mm stroke displacement, depending on conditions.



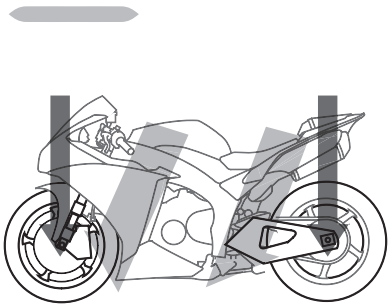
**Braking**

· Load change
The harder the brake is applied, the more the load is concentrated on the front.
· Front fork
Displaces until stroke has almost bottomed.
· Rear cushion
Reaches nearly maximum extended stroke.



**Cornering**

· Load change
Increases the load on the front fork and rear cushion on both sides.
· Front fork
Up to 30 to 90mm stroke displacement depending on the size of the corner.
· Rear cushion
Up to 25 to 40mm stroke displacement, depending on conditions.

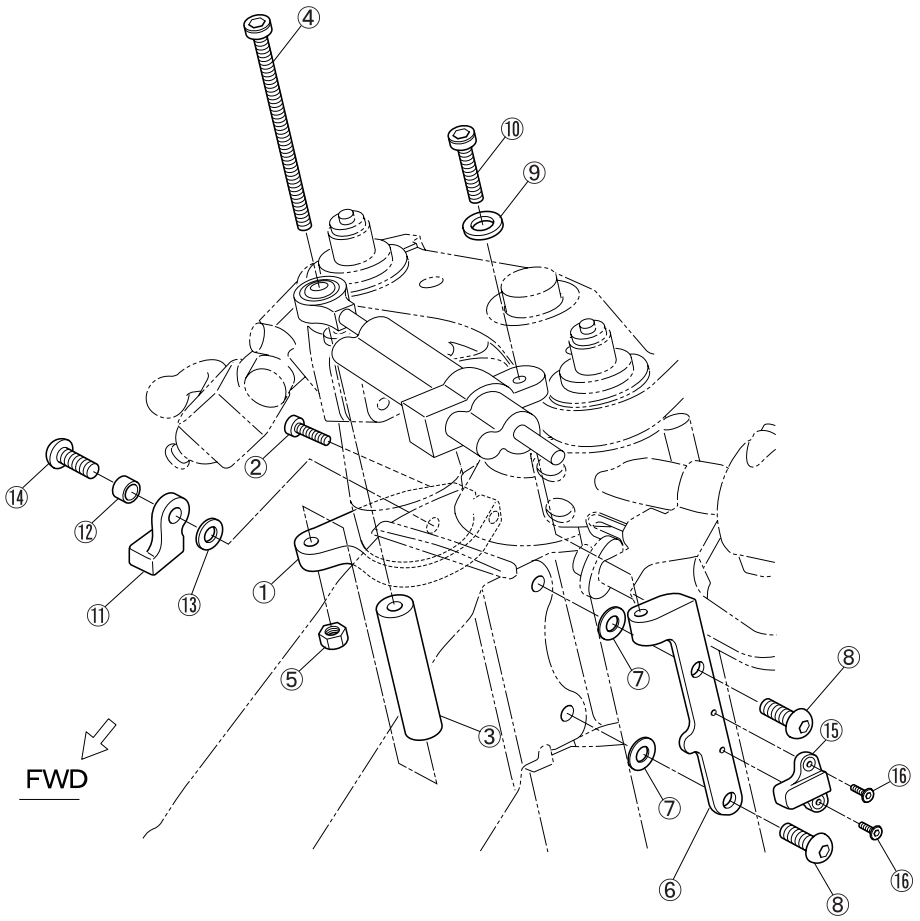


## 31. Steering Damper Stay Set (2C0-C3495-80)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-23495-80 | STAY, DAMPER | 1 | |
| * | 2 | 91317-06025 | BOLT, HEX. SOCKET HEAD | 1 | |
| | 3 | 2C0-23488-80 | SPACER | 1 | |
| * | 4 | 91317-08110 | BOLT, HEX. SOCKET HEAD | 1 | |
| | 5 | 95607-08100 | NUT, U | 1 | |
| | 6 | 2C0-2349T-80 | BRKT., DAMPER | 1 | |
| * | 7 | 90201-07081 | WASHER, PLAIN | 2 | |
| * | 8 | 90149-06302 | SCREW | 2 | |
| | 9 | 5VY-26398-00 | WASHER, SPECIAL | 1 | |
| * | 10 | 91317-08025 | BOLT, HEX. SOCKET HEAD | 1 | |
| | 11 | 2C0-23439-71 | STOPPER, STRG. 2 | 1 | |
| | 12 | 90387-06084 | COLLAR | 1 | |
| * | 13 | 90201-07081 | WASHER, PLAIN | 1 | |
| * | 14 | 90149-06302 | SCREW | 1 | |
| | 15 | 2C0-23429-70 | STOPPER | 1 | |
| * | 16 | 90151-04002 | SCREW, CROSSRECESSED COUNTERSUNK | 2 | |

For the steering damper, use [OHLINS SD121 STROKE 68mm].



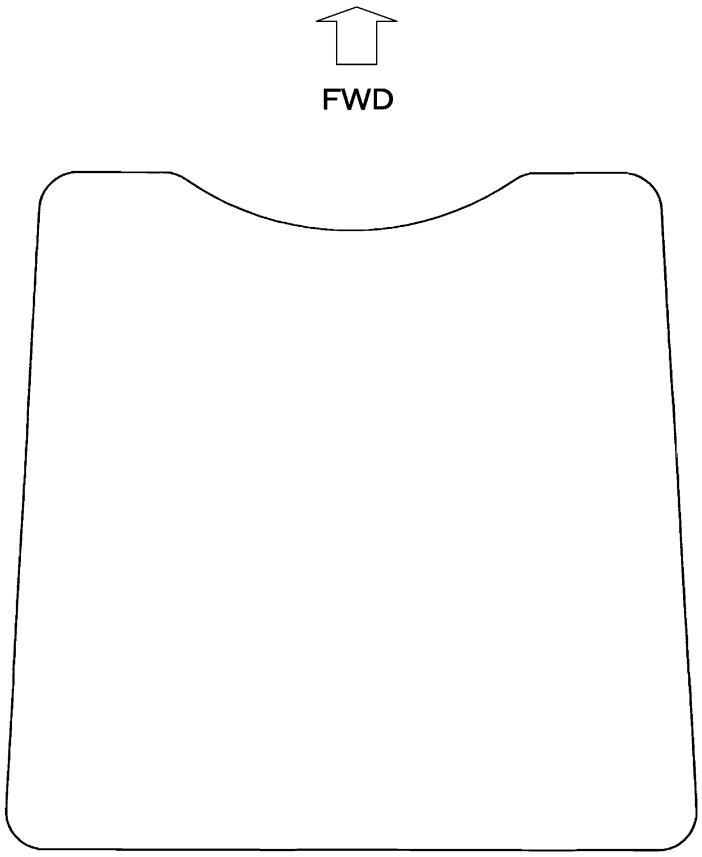
## 32. Seat Cushion (13S-24713-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 13S-24713-70 | CUSHION SEAT | 1 | |

Anti slip seat.

Cut to any size for use.



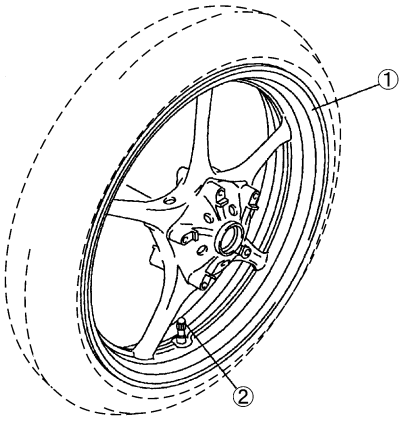
## 33. Front Spare Wheel Assembly (2C0-25100-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-25160-00 | CAST WHEEL ASSY. | 1 | |
| * | 2 | 93900-00030 | VALVE, RIM | 1 | |

*This kit does not include a tire.

This part is an assembly of bearings, spacers and an air valve in a STD wheel.



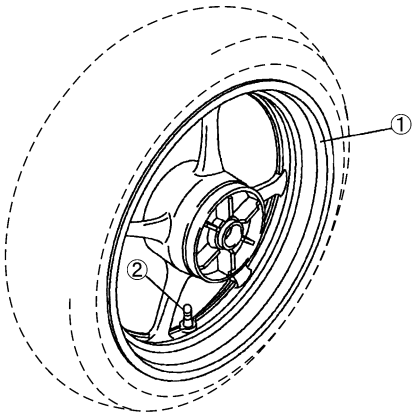
## 34. Rear Spare Wheel Assembly (2C0-25300-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| | 1 | 2C0-25370-00 | CAST WHEEL ASSY. | 1 | |
| * | 2 | 93900-00030 | VALVE, RIM | 1 | |

*This kit does not include a tire.

This part is an assembly of bearings, spacers and an air valve in a STD wheel.

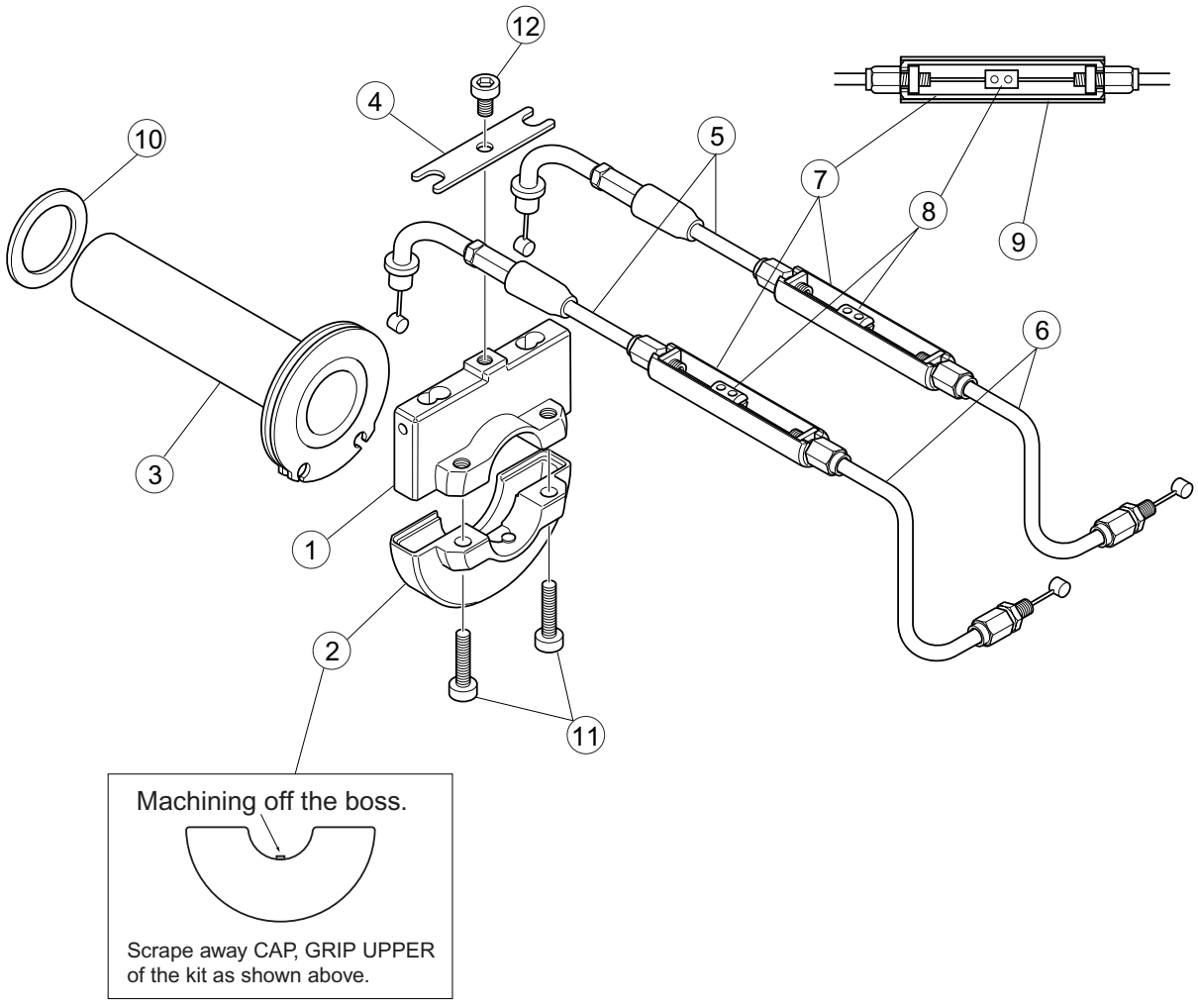


## 35. Throttle Set (2C0-C6300-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| ° | 1 | 2C0-26281-70 | CAP, GRIP UPPER | 1 | |
| * | 2 | 5FL-26282-00 | CAP, GRIP UNDER | 1 | |
| ° | 3 | 5SL-26243-71 | TUBE, GUIDE | 1 | |
| ° | 4 | 2C0-26391-70 | CLIP, WIRE 1 | 1 | |
| ° | 5 | 2C0-26311-70 | WIRE, THROTTLE 1 | 2 | Grip side: Retracting sharing |
| ° | 6 | 2C0-26313-70 | WIRE, THROTTLE 3 | 2 | Engine side: Retracting sharing |
| ° | 7 | 2C0-26261-70 | CYLINDER | 2 | |
| ° | 8 | 5FL-26244-70 | SLIDER | 2 | |
| | 9 | 2C0-2639E-70 | PROTECTOR | 2 | |
| * | 10 | 90201-261L1 | WASHER, PLAIN | 1 | |
| * | 11 | 91314-05020 | BOLT, HEX. SOCKET HEAD | 2 | |
| * | 12 | 91314-05008 | BOLT, HEX. SOCKET HEAD | 1 | |

In this throttle set the throttle grip can be removed and maintained by itself.

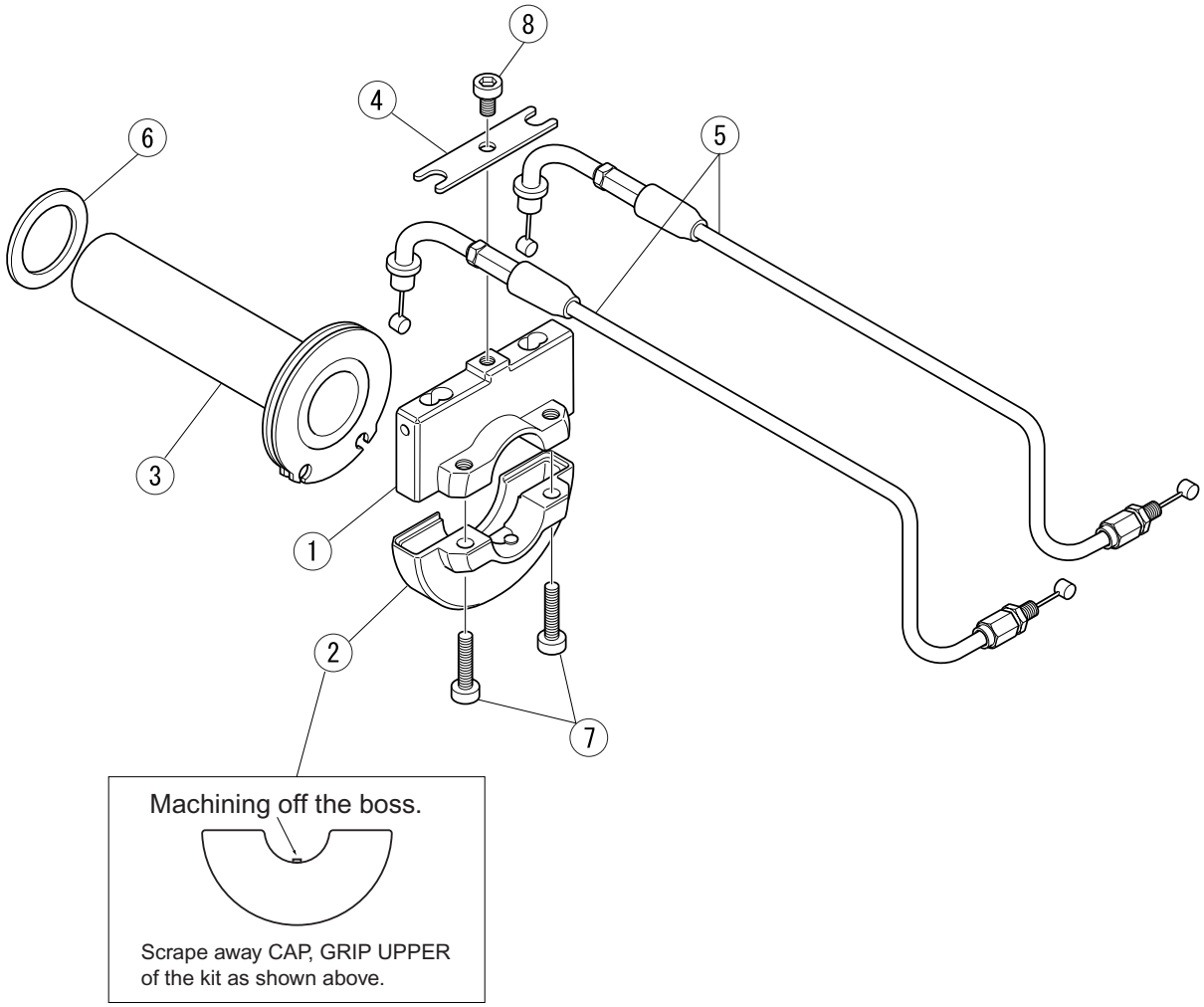


## 36. Throttle Set (13S-C6300-70)

**Parts List**

| | No. | PART No. | PART NAME | Q'TY | REMARKS |
|---|---|---|---|---|---|
| ° | 1 | 2C0-26281-70 | CAP, GRIP UPPER | 1 | |
| * | 2 | 5FL-26282-00 | CAP, GRIP UNDER | 1 | |
| ° | 3 | 5SL-26243-71 | TUBE, GUIDE | 1 | |
| ° | 4 | 2C0-26391-70 | CLIP, WIRE 1 | 1 | |
| ° | 5 | 13S-26302-70 | THROTTLE WIRE ASSY. | 2 | Common use for pulling back. |
| * | 6 | 90201-261L1 | WASHER, PLAIN | 1 | |
| * | 7 | 91314-05020 | BOLT, HEX. SOCKET HEAD | 2 | |
| * | 8 | 91314-05008 | BOLT, HEX. SOCKET HEAD | 1 | |

In this throttle set the working angle of the throttle grip turning is made smaller for quicker response to the throttle openning.



# 3 Tightening Torque List

**Engine**

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| CAP, CAMSHAFT x HEAD | 90105-06027 | BOLT, FLANGE | M6 x 1.0 | 10.0±2 (1.0±0.2) | 20 | CAM SHAFT SHALL TURN LIGHTLY. |
| Embedded in HEAD | 95612-08625 | BOLT, STUD | M8 x 1.25 | 15.0±2 (1.5±0.2) | 8 | |
| Tighten HEAD. | 90179-10006 | NUT | M10 x 1.25 | TURN-OF-NUT METHOD AXIAL FORCE 41kN±2kN SNUG TORQUE 28(2.8) +ROTATION ANGLE 55° | 10 | APPLY OIL BOTH TO THREAD AND BEARING SURFACE. SEE page 74 FOR DETAILS. |
| Tighten HEAD. | 90176-10075 | NUT, CAP | M10 x 1.25 | TURN-OF-NUT METHOD AXIAL FORCE 41kN±2kN SNUG TORQUE 36(3.6) +ROTATION ANGLE 55° | 2 | APPLY OIL BOTH TO THREAD AND BEARING SURFACE. SEE page 74 FOR DETAILS. |
| Tighten HEAD on side of CAM CHAIN compartment. | 90110-06094 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | WITH WASHER |
| SPARK PLUG | 5FL-1119C-70<br>13S-1119C-70 | PLUG, SPARK | M10S x 1.0 | 12 – 15 (1.2 – 1.5) | 4 | SEE page 3 FOR DETAILS. |
| HEAD COVER x HEAD | 90109-066F0 | BOLT | M6 x 1.0 | 12.0±2 (1.2±0.2) | 6 | |
| Plug for sand drain hole | 90340-18002 | PLUG, STRAIGHT SCREW | M18 x 1.5 | 42±4 (4.3±0.4) | 3 | APPLY LOCKING AGENT (LOCKTITE®). |
| Check bolt for oil passage | 95022-08012 | BOLT, FLANGE, SMALL HEAD | M8 x 1.25 | 15.0±2 (1.5±0.2) | 1 | |
| Tighten AI CAP. | 90110-06175 | BOLT HEXAGON SOCKET HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 4 | |
| CAMSHAFT x SPROCKET | 90105-07004 | BOLT, FLANGE | M7 x 1.0 | 24.0±2 (2.4±0.2) | 4 | |
| JOINT, CARBURETOR 1 x HEAD | 91312-06016 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 8 | |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| CON ROD X CAP, CON ROD | 2C0-11654-00 | BOLT, CON ROD | M7 x 0.75 | | 8 | APPLY MOLYB-DENUM DISULFIDE OIL TO THREAD |
| | 2C0-1165A-00 | BOLT, CON ROD | M7 x 0.75 | | 8 | APPLY MOLYB-DENUM DISULFIDE OIL TO THREAD |
| | 90179-07001 | NUT | M7 x 0.75 | 14.7±1.47 (1.5±0.15) +180°±5° | 8 | APPLY MOLYB-DENUM DISULFIDE OIL TO BEARING SURFACE |
| ACM ROTOR x CRANKSHAFT | 90105-126A8 | BOLT, FLANGE | M12 x 1.25 | 70±5 (7.0±0.5) | 1 | DEGREASE TAPERED SUR-FACE. APPLY OIL BOTH TO BOLT BEARING SURFACE AND THREAD AND TO BOTH SIDES OF WASHER. USE MORI-COATED WASHER. |
| TENSIONER ASSY x CYLINDER | 90110-06106 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | INSTALL TEN-SIONER ASSY. |
| Install COVER, THERMOSTAT. | 91312-06020 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| Install JOINT. | 90105-06082 | BOLT, FLANGE, SMALL HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 2 | |
| Install WATER PUMP. | 90110-06140 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| OIL PUMP ASSY x CRANKCASE 2 | 95812-06030 | BOLT, FLANGE | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| OIL PUMP ASSY x CRANKCASE 2 | 95812-06080 | BOLT, FLANGE | M6 x 1.0 | 12.0±2 (1.2±0.2) | 1 | |
| COVER, STRAINER x CRANKCASE 2 | 90109-06015 | BOLT | M6 x 1.0 | 12.0±2 (1.2±0.2) | 13 | |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| DRAIN BOLT for COVER, STRAINER | 90340-14132 | PLUG, STRAIGHT SCREW | M14 x 1.5 | 43.0±4 (4.3±0.4) | 1 | DRAIN BOLT |
| Tighten UNION BOLT for FILTER. | 90401-20145 | BOLT, UNION | M20 x 1.5 | 70.0±5 (7.0±0.5) | 1 | |
| ELEMENT, OIL FILTER | 5GH-13440-20 | OIL CLEANER ASSY | M20 x 1.5 | 17.0±2 (1.7±0.2) | 1 | APPLY GREASE TO O-RING. |
| HOLDER x CRANKCASE 2 | 90110-06161 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| PIPE, OIL x CRANKCASE 2 | 90110-06161 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| OIL COOLER x CARNKCASE 2 | 5EB-12822-00 | BOLT, UNION | M20 x 1.5 | 63.0±3 (6.3±0.3) | 1 | APPLY OIL TO THREAD AND BEARING SUR-FACE. |
| UPPER CASE x CAP CASE ASSY | 92012-06020 | BOLT, BUTTON HEAD | M6 x 1.0 | 5.0±0.5 (0.5±0.05) | 4 | |
| UPPER CASE x LOWER CASE | 98902-05020 | SCREW, CROSS RECESS BINDING | M5 x 0.8 | 2.0±0.5 (0.2±0.05) | 10 | |
| ELEMENT x UPPER CASE | 98902-05020 | SCREW, CROSS RECESS BINDING | M5 x 0.8 | 2.0±0.5 (0.2±0.05) | 1 | |
| JOINT, CARBURETOR 1 x THROTTLE | 90450-56007 | HOSE CLAMP ASSY | M5 x 0.8 | 2.0 – 2.5 (0.2 – 0.25) | 4 | CONTACT-FIT COLLAR OR TORQUE CON-TROL |
| THROTTLE x FUNNEL | 90109-05011 | BOLT | M5 x 0.8 | 3.4 – 5 (0.34 – 0.5) | 6 | |
| LOWER FILTER CASE x FUNNEL (SUPPORT UNIT) | 90159-05035 | SCREW, WITH WASHER | M5 x 0.8 | 2.5±0.5 (0.25±0.05) | 2 | |
| Install THROTTLE WIRE | 13S-26302-00 | THROT-TLE WIRE ASSY. | M6 x 1.0 | 3.5 – 5.5 (0.35 – 0.55) | 2 | |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| NUT, RING x HEAD | 90179-08410 | NUT | M8 x 1.25 | 20.0±2 (2.0±0.2) | 8 | TIGHTEN EXHAUST PIPE & HEAD. |
| STAY, MUFFLER 1, 2 x MUFFLER | 91314-08035 | BOLT, HEXAGON SOCKET HEAD | M8 x 1.25 | 20.0±2 (2.0±0.2) | 2 | INSTALL EXHAUST PIPE. |
| STAY, MUFFLER 2 x BRACKET, MUFFLER 1 | 90105-08054 | BOLT, FLANGE (SMALL HEAD) | M8 x 1.25 | 34.0±4 (3.4±0.4) | 1 | INSTALL DAMPER. |
| Tighten BAND, MUFFLER. | 91314-06030 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 1 | |
| SILENCER x FOOT REST | 90105-08063 | BOLT, FLANGE | M8 x 1.25 | 20.0±2 (2.0±0.2) | 1 | |
| Install WIRE PULLEY. | 13S-1133E-00<br>13S-1133F-00 | WIRE, PULLEY, 1<br>WIRE, PULLEY, 2 | M6 x 1.0 | 5 – 7 (0.5 – 0.7) | 1<br>1 | |
| PULLEY x GEARED MOTOR | 90110-05028 | BOLT, HEXAGON SOCKET HEAD | M5 x 0.8 | 6.5±1.5 (0.65±0.15) | 1 | |
| BRACKET 7 x FRAME | 95827-06014 | BOLT, FLANGE (SMALL HEAD) | M6 x 1.0 | 6 – 10 (0.6 – 1.0) | 2 | |
| BRACKET 7 x SERVOMOTOR | 95027-06025 | BOLT, FLANGE (SMALL HEAD) | M6 x 1.0 | 5 – 8 (0.5 – 0.8) | 2 | |
| Install MUFFLER PROTECTOR. | 90111-06071 | BOLT, HEXAGON SOCKET BUTTON | M6 x 1.0 | 8.0±1.5 (0.8±0.15) | 1 | |
| Install MUFFLER PROTECTOR. | 90111-06099 | BOLT, HEXAGON SOCKET BUTTON | M6 x 1.0 | 6.5±1.5 (0.65±0.15) | 2 | |
| EXHAUST VALVE SUBASSY | 90179-06063 | NUT | M6 x 1.0 | 6.5±1.5 (0.65±0.15) | 1 | |
| CRANKCASE 1 x CRANKCASE 2 | 90119-08083 | BOLT, HEXAGON WITH WASHER | M8 x 1.25 | See page 75 for details. | 8 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| CRANKCASE 1 x CRANKCASE 2 | 90119-08084 | BOLT, HEXAGON WITH WASHER | M8 x 1.25 | See page 75 for details. | 2 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |
| CRANKCASE 1 x CRANKCASE 2 | 90109-06100 | BOLT | M6 x 1.0 | 10.0±2 (1.0±0.2) | 2 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |
| CRANKCASE 1 x CRANKCASE 2 | 95812-06055 | BOLT, FLANGE | M6 x 1.0 | 10.0±2 (1.0±0.2) | 7 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |
| CRANKCASE 1 x CRANKCASE 2 | 95812-08065 | BOLT, FLANGE | M8 x 1.25 | 24±2 (2.4±0.2) | 2 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |
| CRANKCASE 1 x CRANKCASE 2 | 95812-06065 | BOLT, FLANGE | M6 x 1.0 | 10.0±2 (1.0±0.2) | 3 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |
| CRANKCASE 1 x CRANKCASE 2 | 95812-06045 | BOLT, FLANGE | M6 x 1.0 | 10.0±2 (1.0±0.2) | 3 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |
| CRANKCASE 1 x CRANKCASE 2 | 95812-06030 | BOLT, FLANGE | M6 x 1.0 | 10.0±2 (1.0±0.2) | 1 | APPLY OIL BOTH TO THREAD AND TO BEARING SURFACE. |
| Install COVER, CRANKCASE 1. | 90109-06015 | BOLT | M6 x 1.0 | 12.0±2 (1.2±0.2) | 9 | |
| Install COVER, CRANKCASE 2. | 90109-06031 | BOLT | M6 x 1.0 | 12.0±2 (1.2±0.2) | 7 | |
| Install COVER, CRANKCASE 2. | 90110-06156 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| Install COVER 1. | 90110-06303 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 5 | |
| COVER 1 x HOLDER, CLUTCH | 90109-06015 | BOLT | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| COVER 1 x BOLT | 92014-08014 | BOLT, BUTTON HEAD | M8 x 1.25 | 15.0±2 (1.5±0.2) | 1 | |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| COVER 1 x PLUG, STRAIGHT | 90340-32004 | PLUG, STRAIGHT SCREW | M32 x 1.5 | CLOSE CONTACT WITH BEARING SURFACE | 1 | |
| PLATE, BREATHER x C/C1 | 90149-06082 | SCREW | M6 x 1.0 | 12.0±2 (1.2±0.2) | 3 | |
| COVER, CRANKCASE 1 x STATOR ASSY | 90149-06080 | SCREW | M6 x 1.0 | 10.0±2 (1.0±0.2) | 3 | |
| PLUG WITH COMMUNICATION HOLE x CRANKCASE 1 | 90149-06082 | SCREW | M6 x 1.0 | 12.0±2 (1.2±0.2) | 1 | |
| Install COVER, CHAIN CASE. | 90110-06060 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 3 | |
| Install M GALLERY PLUG. | 36Y-15189-00 | PLUG | M16 x 1.5 | 8.0±2 (0.8±0.2) | 2 | TAKE CARE NOT TO OVER-TIGHTEN |
| COVER, CRANKCASE 1 x CLAMP | 90149-06082 | SCREW | M6 x 1.0 | 10.0±2 (1.0±0.2) | 1 | STATOR LEAD |
| Install COVER. | 90109-06015 | BOLT | M6 x 1.0 | 12.0±2 (1.2±0.2) | 5 | |
| Install OIL PIPE (OUTSIDE) | 90110-06161 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 12.0±2 (1.2±0.2) | 2 | |
| CRANKCASE 2 x PICKUP | 90110-06168 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 2 | |
| Embedded in CRANKCASE x STUD, EMBEDDED | 90116-1002* | BOLT, STUD | M10 x 1.25 | (HEIGHT 68.2±1) | 10 | |
| Install PRESSURE PLATE. | 90159-06024 | SCREW, W/W | M6 x 1.0 | 8.0±2 (0.8±0.2) | 6 | |
| BOSS, CLUTCH x MAIN AXLE | 4B1-16377-70 | NUT, LOCK | M20 x 1.0 | 115.0±5 (11.5±0.5) | 1 | CRIMP AND APPLY OIL BOTH TO THREAD AND BEARING SURFACE. |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| BOSS, PRESSURE PLATE x BOLT, STUD | 2C0-16374-00 | BOLT, STUD | M8 x 1.25 | 25.0±2 (2.5±0.2) | 6 | |
| Install SPROCKET, DRIVE. | 90179-20005 | NUT | M20 x 1.0 | 85.0±5 (8.5±0.5) | 1 | WITH LOCK WASHER |
| HOUSING, BEARING | 90151-06024 | SCREW, CROSS-RECESSED COUNTER-SUNK | M6 x 1.0 | 12.0±2 (1.2±0.2) | 3 | CRIMP. |
| Install STOPPER, SHAFT BAR. | 90110-06182 | BOLT, HEXAGON | M6 x 1.0 | 10.0±2 (1.0±0.2) | 2 | |
| STOPPER embedded in CRANKCASE | 1D7-18127-00 | STOPPER, SCREW | M8 x 1.25 | 22.0±2 (2.2±0.2) | 1 | |
| Install ARM, SHIFT. | 95822-06020 | BOLT, FLANGE | M6 x 1.0 | 10.0±2 (1.0±0.2) | 1 | CHECK FOR SERRATION TIGHTENING UP. |
| Install ROTOR, PICKUP. | 90105-08113 | BOLT, FLANGE | M8 x 1.25 | 35.0±5 (3.5±0.5) | 1 | |
| Install STARTER MOTOR. | 90105-06083 | BOLT, FLANGE (SMALL HEAD) | M6 x 1.0 | 10.0±2 (1.0±0.2) | 2 | |
| NEUTRAL SWITCH ASSY | 3GB-82540-01 | NEUTRAL S/W ASSY | M10 x 1.25 | 19.6±2 (2.0±0.2) | 1 | OVERTIGHTEN-ING LEADS TO DAMAGE. |
| Install OIL LEVEL SENSOR. | 95022-06016 | BOLT, FLANGE (SMALL HEAD) | M6 x 1.0 | 10.0±2 (1.0±0.2) | 2 | APPLY GREASE TO O-RING. |
| SPEED SENSOR x C/C | 91312-06016 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 1 | |
| CAM SENSOR x COVER H/C | 90110-06175 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 7.5±1.5 (0.75±0.15) | 1 | |
| WIRE HARNESS (NEGATIVE LEAD WIRE) | 91380-06012 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 10.0±2 (1.0±0.2) | 1 | |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| Install O2 SENSOR. | 13S-8592A-00 | O2 SEN-SOR | M18 x 1.5 | 45.0±5 (4.5±0.5) | 1 | |
| Install THERMOSENSOR. | 8CC-85790-01 | THERMO-SENSOR ASSY | M12 x 1.5 | 17.6±2 (1.8±0.2) | 1 | |

**Body**

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| HANDLE, CROWN & OUTER TUBE | 91314-08030 | BOLT, HEXAGON SOCKET HEAD | M8 x 1.25 | 23 – 28 (2.3 – 2.8) | 2 | |
| HANDLE, CROWN & STEERING SHAFT | 90170-28419 | NUT, HEX-AGON | M28 x 1.0 | 100 – 125 (10.2 – 12.7) | 1 | |
| HANDLE & OUTER TUBE | 91314-08030 | BOLT, HEXAGON SOCKET HEAD | M8 x 1.25 | 28 – 35 (2.8 – 3.6) | 2 | |
| STEERING SHAFT and RING NUT | 90179-30691 | NUT | M30 x 1.0 | 12 – 15 (1.2 – 1.5) | 1 | |
| OUTER TUBE & UNDER BRACKET | 91314-08030 | BOLT, HEXAGON SOCKET HEAD | M8 x 1.25 | 20 – 25 (2.0 – 2.5) | 4 | |
| E/G BRACKET, FRONT | 95024-10040 | BOLT, FLANGE (SMALL HEAD) | M10 x 1.25 | 35 – 45 (3.6 – 4.6) | 2 | |
| E/G BRACKET, REAR UPPER | 90105-12228 | BOLT, FLANGE | M12 x 1.25 | | 1 | |
| | 90179-12248 | NUT | M12 x 1.25 | 58 – 70 (5.9 – 7.1) | 1 | |
| E/G BRACKET, REAR UNDER | 90105-12228 | BOLT, FLANGE | M12 x 1.25 | | 1 | |
| | 90179-12248 | NUT | M12 x 1.25 | 58 – 70 (5.9 – 7.1) | 1 | |
| MAIN FRAME & REAR FRAME | 90149-10002 | SCREW | M10 x 1.25 | 33 – 40 (3.3 – 4.1) | 4 | |
| PIVOT SHAFT & FRAME | 2C0-22141-10 | SHAFT, PIVOT | M32 x 1.5 | 12 – 19 (12.2 – 1.9) | 1 | |
| ARM, RELAY 1 & FRAME | 90109-10017 | BOLT | M10 x 1.25 | | 1 | SCREW IN FROM THE LEFT SIDE |
| | 95602-10200 | NUT, U FLANGE | M10 x 1.25 | 31 – 49 (3.2 – 5) | 1 | |
| ARM, RELAY 1 & ARM 1 | 90109-12010 | BOLT | M12 x 1.25 | | 1 | SCREW IN FROM THE LEFT SIDE |
| | 90185-12119 | NUT, SELF LOCKING | M12 x 1.25 | 31 – 49 (3.2 – 5) | 1 | |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| ARM 1 & REAR ARM | 90109-12010 | BOLT | M12 x 1.25 | | 1 | SCREW IN FROM THE LEFT SIDE |
| | 90185-12119 | NUT, SELF LOCKING | M12 x 1.25 | 31 – 49 (3.2 – 5) | 1 | |
| REAR CUSHION & ARM, RELAY 1 | 90109-12011 | BOLT | M12 x 1.25 | | 1 | SCREW IN FROM THE LEFT SIDE |
| | 90185-12119 | NUT, SELF LOCKING | M12 x 1.25 | 31 – 49 (3.2 – 5) | 1 | |
| CHAIN PULLER ADJUST NUT | 95604-08200 | NUT, U FLANGE | M8 x 1.25 | 12 – 19 (12.2 – 1.9) | 2 | |
| SHAFT, PIVOT & LOCK NUT | 2C0-22252-00 | NUT 2 | M32 x 1.5 | 75 – 115 (7.6 – 11.7) | 1 | |
| SHAFT, PIVOT & U NUT | 90185-22002 | NUT SELF LOCKING | M22 x 1.5 | 55 – 85 (5.6 – 8.7) | 1 | |
| FUEL PUMP & FUEL TANK | 90110-05028 | BOLT, HEXAGON SOCKET HEAD | M5 x 0.8 | 3 – 5 (0.3 – 0.5) | 6 | |
| FRONT STAY for FUEL TANK & FRAME | 90110-06233 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 5 – 8 (0.5 – 0.8) | 1 | |
| Mid portion of FUEL TANK & STAY | 91312-06016 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 7 – 10 (0.7 – 1.0) | 2 | |
| BRACKET, TANK (rear) & FUEL TANK | 91312-06090 | BOLT, HEXAGON SOCKET HEAD | M6 x 1.0 | 5 – 8 (0.5 – 0.8) | 1 | |
| BRACKET, TANK (rear) & REAR FRAME | 90111-06071 | BOLT, HEXAGON SOCKET BUTTON | M6 x 1.0 | 5 – 8 (0.5 – 0.8) | 4 | |
| FRONT WHEEL SHAFT & FR FORK | 90105-14002 | BOLT, FLANGE | M14 x 1.5 | | 1 | |
| REAR WHEEL SHAFT & NUT | 90185-24007 | NUT, SELF LOCKING | M24 x 1.5 | 90 – 130 (9.2 – 13.3) | 1 | |
| FR CALIPER & FR FORK | 90401-10012 | BOLT, UNION | M10 x 1.25 | 30 – 40 (3.1 – 4.1) | 4 | |
| DISC BRAKE & FR WHEEL | 90149-06043 | SCREW | M6 x 1.0 | 14 – 22 (1.4 – 2.2) | 10 | APPLY LOCK-ING AGENT (LOCKTITE®). |
| DISC BRAKE & RR WHEEL | 90149-08009 | SCREW | M8 x 1.25 | 23 – 37 (2.3 – 3.8) | 5 | APPLY LOCK-ING AGENT (LOCKTITE®). |

| To be tightened | Part No. | Part Name | Screw dia. x pitch | Tightening torque N•m (kgf•m) | Q'ty | Remarks |
|---|---|---|---|---|---|---|
| REAR WHEEL SPROCKET & CLUTCH HUB | 90185-10009 | NUT, SELF LOCKING | M10 x 1.25 | 90 – 109 (9.2 – 11.1) | 6 | |
| SPLIT BOLT for FRONT AXLE | 91314-08040 | BOLT, HEXAGON SOCKET HEAD | M8 x 1.25 | 18 – 23 (1.8 – 2.3) | 4 | |

**Tightening the Cylinder Head**

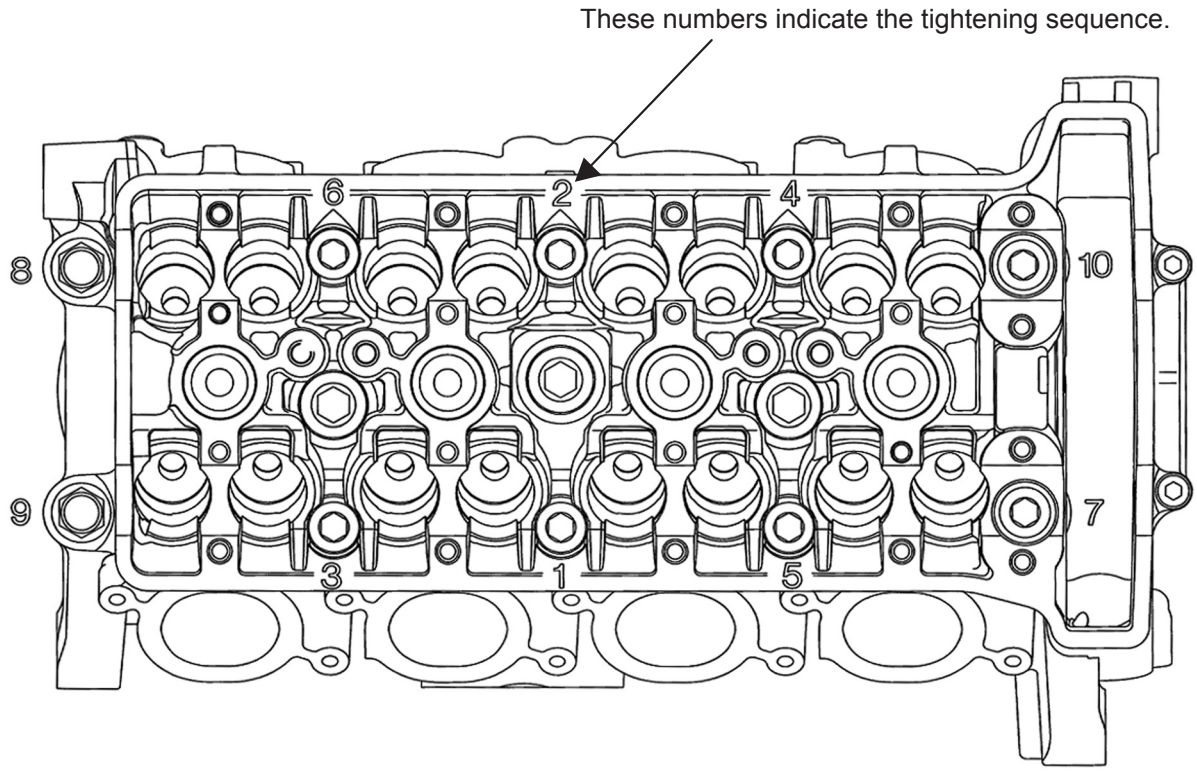
Tightening the Cylinder Head (Turn-of-Nut Method)

1. Tighten the bolts in the tightening sequence of 1 to 7 to a snug torque of 28N•m (2.8kgf•m).
2. Tighten the bolts in the tightening sequence of 8 and 9 to a snug torque of 36N•m (3.6kgf•m).
3. Tighten the bolt in the tightening sequence of 10 to a snug torque of 28N•m (2.8kgf•m).
4. Retighten the bolts in the tightening sequence of 1 to 10 to a turn-of-nut angle of 55°.

**TIP**

**The numbers 1 to 10 show the sequence in which the bolts are tightened.**

**Apply engine oil to the bolt threads, contact surfaces, and washers.**



**Installing the Crankcase**

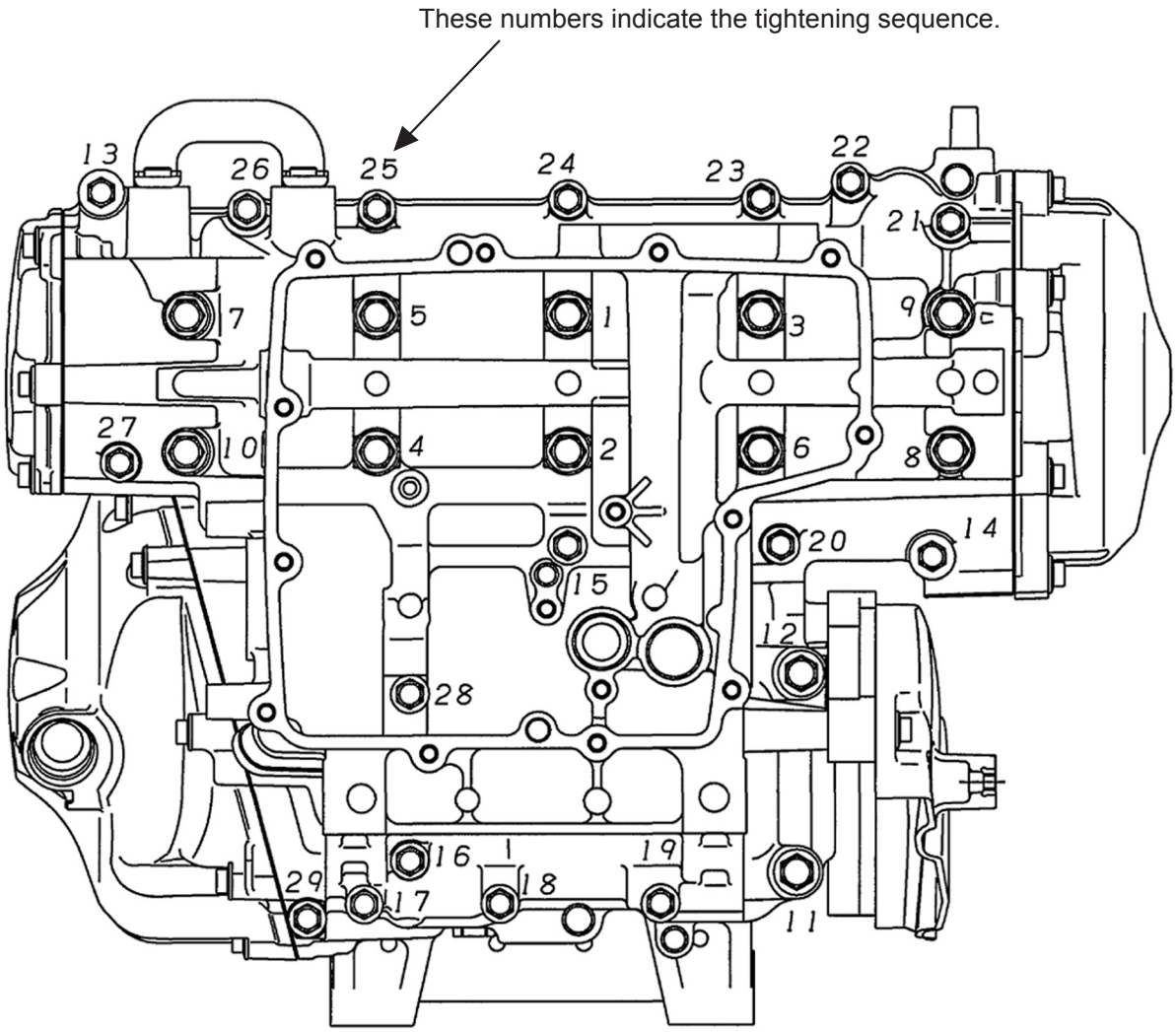
Tightening the bolts

1. Tighten the bolts in the tightening sequence of 1 to 10 to 20N•m (2.0kg•m).
2. After loosening the bolts once in the tightening sequence of 1 to 10, retighten them one by one to 12N•m (1.2kg•m).
3. Retighten the bolts in the tightening sequence of 1 to 7 to a turn-of-nut angle of 50°±5°.
4. Retighten the bolts in the tightening sequence of 8 and 9 to a turn-of-nut angle of 75°±5°.
5. Retighten the bolt in the sequence of 10 to a turn-of-nut angle of 50°±5°.
6. Tighten the bolts in the tightening sequence of 11 and 12 to 24±2N•m (2.4±0.2kgf•m).
7. Tighten the bolts in the tightening sequence of 13 to 29 to 10±2N•m (1.0±0.2kgf•m).

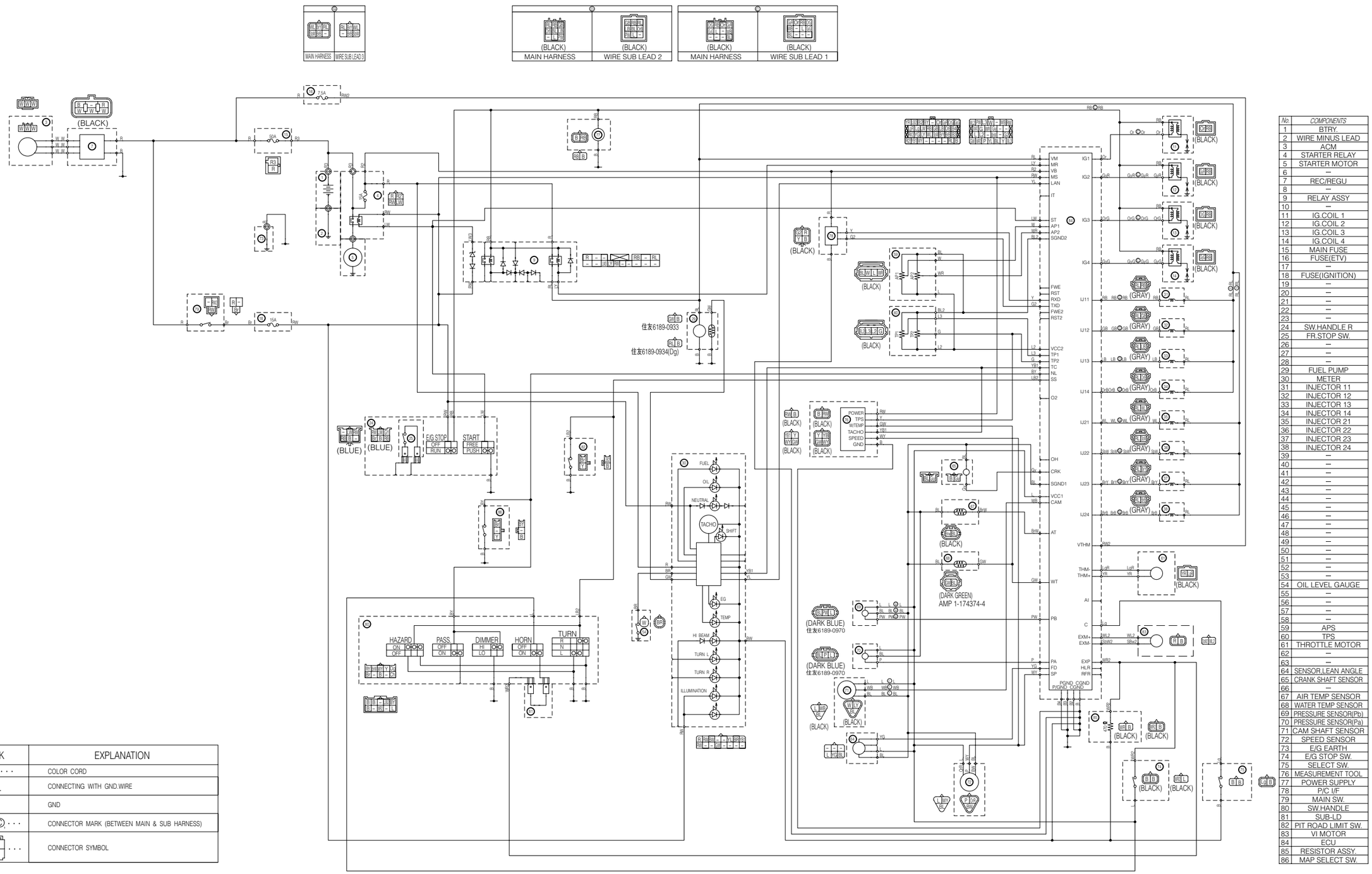
**TIP**

**The numbers 1 to 29 show the sequence in which the bolts are tightened.**

**Apply engine oil to the bolt threads and both sides of the washers.**



# 4 YZF-R6 Wiring Diagram


MAIN HARNESS
WIRE SUB LEAD 3
(BLACK)
MAIN HARNESS
(BLACK)
WIRE SUB LEAD 2
(BLACK)
MAIN HARNESS
(BLACK)
WIRE SUB LEAD 1
(BLACK)
(BLUE)
(BLUE)
E/G STOP
OFF
RUN
START
FREE
PUSH
HAZARD
ON
OFF
PASS.
OFF
ON
DIMMER
HI
LO
HORN
OFF
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TURN
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